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COMMITTEE PRINT NO. 13

TRINITY RIVER DIVISION, CENTRAL VALLEY PROJECT, CALIFORNIA

DATA AND INFORMATION RELATING TO THE PROPOSED JOINT DEVELOPMENT OF THE TRINITY RIVER DIVISION AND THE PURCHASE OF FALLING WATER THEREFROM BY THE PACIFIC GAS AND ELECTRIC COMPANY

DECEMBER 1957

Printed for the use of the Committee on Interior and Insular Affairs
House of Representatives

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STATEMENT OF THE CHAIRMAN

DECEMBER 1957.

To the Members of the Interior and Insular Affairs Committee:

On February 12, 1957, the Secretary of the Interior submitted to Congress a report on the Trinity River division, Central Valley project, California, in which he recommends acceptance of a proposal by the Pacific Gas & Electric Co., whereby the company would construct the power facilities of the Trinity River division and purchase falling water from the Federal Government.[1]

Upon receipt of this report it became immediately evident that, in its consideration of this proposal, the committee would need additional backup data and information from the Department, the Pacific Gas & Electric Co., and others, as well as clarification of many aspects of the proposal. Therefore, requests for such additional information were made from time to time as studies of the proposal proceeded.

The data and information furnished the committee in response to these requests are compiled herein for the information of committee members. I believe you will find this material most valuable in connection with the committee's consideration of H. R. 6997, which has as its purpose approval of the partnership proposal.

CLAIR ENGLE,
Chairman, House Interior and Insular Affairs Committee.

[1] The report of the Department of the Interior on the proposal for joint development of the Trinity River division and the purchase of falling water therefrom by the Pacific Gas & Electric Co., are set out in H. Doc. 94, 85th Cong., pts. I and II.

CONTENTS

	Page
Statement of chairman	III
PART I. INFORMATION AND DATA FURNISHED BY THE DEPARTMENT OF THE INTERIOR AND CORRESPONDENCE RELATING THERETO	
Committee's requests for information and data supporting report on joint development (3 letters)	1
Department's submission of a part of requested material	3
Central Valley project allocation for joint development	4
Central Valley project repayment study for joint development	Faces 8
Summary of operation study for all-Federal development	8
Central Valley project repayment study for all-Federal development	Faces 8
Summary of operation study for joint development prepared by Pacific Gas & Electric Co	9
Secretary's request for deferment of consideration of legislation due to certain errors in data submitted	11
Department's submission of revised data on additional costs of power to preference customers and Federal installations under joint development	12
Committee's request for detailed data supporting revised figures of additional costs of power to preference customers and Federal installations under joint development	13
Department's submission of additional data supporting revised figures	14
Committee's followup request for report on H. R. 6997	20
Department's report on H. R. 6997	20
Committee's request for additional information and data relative to the Department's report on joint development	23
Pacific Gas & Electric Co. letter expressing willingness to continue integrated power operations under all-Federal development	25
Committee's request that Department negotiate agreement with Pacific Gas & Electric Co. for continued integrated power operations under all-Federal development of Trinity power facilities, the Department's reply, and correspondence relating thereto	25
Department's submission of additional information and data supporting its report on joint development of the Trinity River division	29
Estimated cost of purchased energy to support a preference load of 290,000 kilowatts	34
Correspondence relating to the use of the schedule R rate in connection with the Sacramento Municipal Utility District	36
Detailed computations supporting rate comparisons	38
Estimates of flows through powerplants used to determine average energy generation and nondependable capacity	42
Estimates of energy generation and available power capacities for commercial loads without the San Luis unit	43
PART II. INFORMATION AND DATA FURNISHED BY THE PACIFIC GAS & ELECTRIC CO. AND CORRESPONDENCE RELATING THERETO	
Committee's request to Pacific Gas & Electric Co. for information and data (2 letters)	48
Pacific Gas & Electric Co.'s submission of requested material	50
Pacific Gas & Electric Co. service to Ames Laboratory	51
Pacific Gas & Electric Co. service to Sacramento Municipal Utility District	52
Explanation of operation study T–3	53
Alternative steam plant costs	59
Trinity transmission facilities	61
Cost estimates for Trinity powerplants and related facilities	61
Explanation of wheeling arrangements proposed by supplement No. 5, contract 175r—2650	61

PART III. INFORMATION FURNISHED WITH RESPECT TO POWER AND ENERGY COSTS FOR FEDERAL INSTALLATIONS IN NORTHERN CALIFORNIA

	Page
Committee's requests for information on power and energy costs for Federal installations in northern California (3 letters)	63
Submission of information on power and energy costs	64
Department of Defense	66
Atomic Energy Commission	72
General Services Administration	74

PART IV. OTHER INFORMATION FURNISHED THE COMMITTEE

Committee's inquiry to the California Public Utilities Commission relative to the applicability of the schedule R rate to the Sacramento Municipal Utility District, and the Commission's reply	76
Committee's inquiry to the Federal Power Commission relative to the dependable capacity available to the Pacific Gas & Electric Co. from the Central Valley project, and the Federal Power Commission's reply thereto	77

TRINITY RIVER DIVISION, CENTRAL VALLEY PROJECT, CALIFORNIA

PART I. INFORMATION AND DATA FURNISHED BY THE DEPARTMENT OF THE INTERIOR AND CORRESPONDENCE RELATING THERETO

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C., February 28, 1957.

Hon. FRED A. SEATON,
Secretary of the Interior, Department of the Interior,
Washington, D. C.

MY DEAR MR. SECRETARY: Your communication of February 12, 1957, transmitting to the Speaker of the House of Representatives the results of your negotiations with the Pacific Gas & Electric Co. for the purchase of falling water to be produced by the Trinity River division of the Central Valley project, has been referred to the Committee on Interior and Insular Affairs for consideration. As you know, this is a matter of prime interest to me and to the committee.

In order that my staff may have the information needed to study the proposal by Pacific Gas & Electric Co. and your favorable recommendation thereon, the committee should be furnished copies of the cost-allocation studies, repayment studies, water-supply studies, and the criteria and assumptions which underlie and back up the conclusions set forth in your February 12 letter and in the Commissioner's February 11 letter which you enclosed to the Speaker. In other words, please furnish the usual detailed information required by the committee for other projects proposed for authorization.

You will understand that it is not possible for me to list at this time all of the specific information which will be required in the committee's study as such needs will undoubtedly develop as the study progresses. At the same time, I'm sure you will understand also that we cannot properly evaluate the proposal without thoroughly investigating the bases on which your conclusions have been reached. In this connection, then, I believe you will agree that the committee's consideration will be greatly expedited and much time would be saved if you would authorize the Bureau of Reclamation—both its Washington and Sacramento offices—in addition to furnishing the general information requested above, to furnish all specific information requested by the committee staff. If such an arrangement is not possible and it is necessary for me to request material on a piecemeal basis, I am fearful that delay in completion of the committee's study will result.

May I please hear from you soon with respect to these matters?

Sincerely yours,

CLAIR ENGLE, *Chairman.*

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
OFFICE OF THE CHAIRMAN,
Washington, D. C., March 25, 1957.

Hon. FRED A. SEATON,
Secretary of the Interior,
Washington, D. C.

MY DEAR MR. SECRETARY: Reference is made to my letter of February 28, 1957, requesting general detailed data which underlie and back up the conclusions set forth in your February 12 recommendation on the Trinity project, and to Acting Secretary Wormser's reply of March 14 stating that the data were being assembled.

The data furnished should include the following specific information:

(*a*) The backup studies showing the basis for the additional payments, under joint development, of $86 million and $118 million (if San Luis is built) by preference customers over the 50-year contract period, including the identity of the customers assumed and the assumptions made with respect to the load of each customer over the 50-year period.

(*b*) A list of all preference customers, including Federal installations, presently being served by the Bureau of Reclamation from the Central Valley project, the terms of the contracts or agreements with these customers including contract period, amount of energy furnished, rates, etc., and a comparison of the amounts of energy furnished these customers with the amounts needed to meet their full requirements.

I must have this information in view of certain indications that the additional costs to potential preference customers of Trinity energy under joint development have been greatly underestimated. For instance, Federal officials, testifying before the House Appropriations Committee recently, stated that the energy which the Ames Laboratory purchased from the Bureau cost about 5 mills per kilowatt-hour compared to 13 mills from the Pacific Gas & Electric Co. These officials further stated that the Bureau could only supply part of their energy needs and that during fiscal year 1958 they expected to purchase 216 million kilowatt-hours from the Pacific Gas & Electric Co.

I assume that the detailed backup data which is being assembled will also include the following:

(1) The water operation study forming the basis of the Bureau of Reclamation analysis.

(2) The detailed repayment studies of the Central Valley project under all-Federal development and under the proposed joint development, including related information contributing to the basic assumptions made in these studies, such as the company's study indicating the value of the Trinity energy to its overall power system and other information furnished by the company.

(3) Copies of all allocation studies.

You will understand that the committee must have this information promptly for its consideration of your recommendation, and it should therefore be furnished at the earliest possible date.

Sincerely yours,

CLAIR ENGLE, *Chairman.*

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C., April 4, 1957.

Hon. FRED A. SEATON,
Secretary of the Interior,
Washington, D. C.

DEAR MR. SECRETARY: In connection with the committee's consideration of your recommendation on the Trinity project, would you be kind enough to furnish me as a part of the backup material for the financial analysis supporting your report, the financial analysis and other pay-out information which the Pacific Gas & Electric Co. furnished the Bureau of Reclamation on December 10, 1956. I still have not received any of the information previously requested. It is my hope that all of this information can be furnished within the next few days.

Sincerely yours,

CLAIR ENGLE, *Chairman.*

DEPARTMENT OF THE INTERIOR,
Washington, D. C., April 15, 1957.

Hon. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D. C.

DEAR MR. ENGLE: By letter of March 14, 1957, we acknowledged your letter of February 28 indicating we would furnish the information you had requested in order to study the proposal of the Pacific Gas & Electric Co. to purchase the use of the falling water of the Trinity River division. The requested information has now been assembled and is attached as follows:

Enclosure No. 1 is the cost allocation and repayment analysis under joint development. This material is comparable to that contained in the February 1957 report on the all-Federal development (enclosure No. 4).

Enclosure No. 2 contains supporting data for the cost allocation analyses in both the report and enclosure No. 1.

Enclosure No. 3 contains the operation studies for both the all-Federal and the joint development.

Enclosure No. 4 is our latest detailed report on the all-Federal development.

A copy of the letter of December 10, 1956, from the Pacific Gas & Electric Co. to the Bureau of Reclamation requested in your letter of April 4, 1956, is contained in enclosure No. 3 attached.

Other information which you have requested is being assembled and will be forwarded to you in the near future.

Sincerely yours,

FRED G. AANDAHL,
Assistant Secretary of the Interior.

ENCLOSURE NO. 1. CENTRAL VALLEY PROJECT COST ALLOCATION AND REPAYMENT ANALYSIS UNDER JOINT DEVELOPMENT

(Only tables 1 and 2, showing the cost allocation under joint development, and table 4, showing the power system repayment under joint development, are reproduced here. Tables 3, 5, and 6, showing irrigation, fish and wildlife, and municipal and industrial water repayment respectively, are in the committee's files.)

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TABLE 1.—*Allocation of construction costs of the Central Valley project, California (less the Trinity River division and Sacramento canals unit) by the separable costs-remaining benefits method*

[Thousands of dollars]

Item	Irrigation	Municipal and industrial water service	Commercial power	Flood control	Navigation	Fish and wildlife		Total
						Reimbursable	Nonreimbursable [2]	
Present worth values: [1]								
Benefits [3]	$2,894,483	[4] $53,348	[4] $457,366	$100,742	$37,591	[4] 6,552		$3,550,082
Alternate cost	642,219	53,348	[5] 457,366	290,571	42,014	6,552	$10,466	1,502,536
Construction cost	(557,530)	(53,348)	(359,233	(279,240)	(26,900)	(6,552)	(4,745)	(1,404,403)
Operation, maintenance, and replacement	(84,689)			(11,331)	(15,114)		(5,721)	(98,133)
Taxes foregone at $8.50 a year per kilowatt			(98,133)					1,308,284
Benefits limited by alternative cost	642,219	53,348	457,366	100,742	37,591	6,552	10,466	593,769
Separable cost [6]	276,406	12,879	287,975	3,487	0	2,556	10,466	714,515
Remaining benefits	365,813	40,469	169,391	97,255	37,591	3,996	0	389,053
Allocated joint cost [7]	199,185	22,036	92,233	52,955	20,468	2,176	0	982,822
Allocation of all costs	475,591	34,915	380,208	56,442	20,468	4,732	10,466	240,941
Allocation deductions	66,344	7,363	164,647			2,587		(142,808)
Operation, maintenance, and replacement [8]	(66,344)	(7,363)	(66,514)			(2,587)		(98,133)
Taxes foregone			(98,133)					741,881
Allocation of construction cost at present prices	409,247	27,552	215,561	56,442	20,468	2,145	10,466	
Adjusted to total estimated cost:								472,881
Allocation of project investment without adjustment of fish and wildlife [9]	258,734	17,419	136,282	35,684	12,940	1,356	10,466	
Adjustment of fish and wildlife allocation [10]						1,233	10,589	59,213
Allocation of nonreimbursable investment				35,684	12,940		10,589	413,668
Allocation of repayable investment	258,734	17,419	136,282			1,233		
Allocation of project investment	258,734	17,419	136,282	35,684	12,940	1,233	10,589	[11] 472,881

[1] All construction and operation, maintenance, and replacement cost estimates, except those associated with the fish and wildlife nonreimbursable purpose, are placed on a common price level approximating that of April 1956. Operation, maintenance, and replacement expenses for the 50-year period (1964–2013) are converted to present worth at 2⅛ percent interest.

[2] Includes the cost of all single-purpose fish and wildlife features and an appropriate share of other costs necessary to provide 7,000 acre-feet of free water annually in the Delta-Mendota Canal service area.

[3] Total benefits are used for irrigation; direct benefits only are used for all other purposes.

[4] Direct benefits for the purposes indicated are assumed equal to alternate cost.

[5] The commercial power benefit is assumed to be equal to the alternate cost of power from a privately financed steam plant at load center under assumed annual equivalent operating conditions.

[8] Separable costs for the project purposes are computed as follows:

[Thousands of dollars]

	Irrigation	Municipal and industrial water service	Commercial power	Flood control	Navigation	Fish and wildlife	
						Reimbursable	Nonreimbursable
Cost to be allocated	$982,822	$982,822	$982,822	$982,822	$982,822	$982,822	$982,822
Less: Remaining project construction cost	−620,145	−832,163	−603,913	−836,527	−840,014	−838,944	−835,269
Less: Operation, maintenance, and replacement	−86,271	−137,780	−90,934	−142,808	−142,808	−141,322	−137,087
Separable cost	276,406	12,879	287,975	3,487	0	2,556	10,466

[7] The joint cost assigned each purpose is .5444994 of the remaining benefit ($389,053,000/$714,515,000).

[8] Project operation, maintenance, and replacement expenses are assigned to the reimbursable project purposes.

[9] The allocation on 1956 costs is adjusted to total estimated cost by adjusting the allocation to each purpose (except nonreimbursable fish and wildlife) proportionately. The factor is .632220.

[10] As 9.1 percent (7,000 acre-feet) of the fish and wildlife water delivered is free, adjustment is made at this point to transfer a corresponding percentage of the reimbursable fish and wildlife allocation to the nonreimbursable column.

[11] Does not include $54,898,000 for water service distribution systems, or $67,000 for a fish hatchery pipeline at Friant for which the Federal Government was reimbursed by the State of California.

TABLE 2.—*Allocation of construction costs of the Central Valley project, California, including the Trinity River division and Sacramento canals unit and assuming private construction of the single-purpose power features of the Trinity River division*

[In thousands of dollars]

Item	Irrigation	Municipal and industrial water service	Commercial power [1]	Flood control	Navigation	Fish and wildlife		Recreation [2]	Total
						Reimbursable	Nonreimbursable [2]		
I. Project without Trinity River division and Sacramento canals unit:									
Allocation of base from table 1	258,734	17,419	136,282	35,684	12,940	1,233	10,589	----------	472,881
Adjustment to integrate Trinity River division [3]	2,412	----------	−2,412	----------	----------	----------	----------	----------	0
Adjusted allocation	261,146	17,419	133,870	35,684	12,940	1,233	10,589	----------	472,881
II. Trinity River division and Sacramento canals unit: [4]									
Benefits [5]	656,496	(6)	[7] 123,375	(6)	(6)	[7] 2,102	----------	[7] $215	782,188
Alternate cost:	178,894	(6)	[8] 123,375	(6)	(6)	2,102	1,039	215	305,625
Construction	(178,894)	(6)	(123,375)	(6)	(6)	(1,960)	(841)	(215)	(305,625)
Operation, maintenance, and replacement						(142)	(198)	----------	
Benefits limited by alternative cost	178,894	(6)	123,375	(6)	(6)	2,102	1,039	215	305,625
Separable cost [9]	91,553	(6)	37,108	(6)	(6)	1,351	1,039	215	131,266
Remaining benefits	87,341	(6)	86,267	(6)	(6)	751	0	0	174,359
Allocated joint cost [10]	63,273	(6)	62,495	(6)	(6)	544	0	0	126,312
Allocation of all costs	154,826	(6)	99,603	(6)	(6)	1,895	1,039	215	275,578
Allocation deductions	23,413	(6)	4,910	(6)	(6)	323	----------	----------	28,646
Operation, maintenance, and replacement [11]	(23,413)	(6)	(4,910)	(6)	(6)	(323)	----------	----------	(28,646)
Allocation of construction costs	131,413	(6)	94,693	(6)	(6)	1,572	1,039	215	228,932
III. Project with Trinity River division and Sacramento canals unit	392,559	17,419	228,563	35,684	12,940	2,805	11,628	215	701,813

[1] The allocation of Trinity River division costs to commercial power is for falling water.

[2] Only single-purpose costs for minimum basic recreational facilities are included.

[3] The allocation adjustment credits commercial power and charges irrigation for the loss of commercial power service due to encroachment by irrigation project pumping when the Trinity River division is added.

[4] All construction and operation, maintenance, and replacement costs estimates are on a common price level (approximately April 1956) and the operation, maintenance, and replacement assumed for the 50-year period 1964–2013 is converted to present worth using a 2½ percent interest rate.

[5] Direct benefits are used for all purposes except irrigation, for which total benefits are used.

[6] No additional service.

[7] The direct benefit is assumed to equal the alternate cost.

[8] The alternative cost of "falling water" made available to Pacific Gas & Electric Co. hydroelectric facilities for commercial power use from the federally constructed storage, conveyance and diversion features of the Trinity River division is assumed to be the cost of a privately financed steam plant at load center less the estimated private costs necessary to convert the falling water to electrical energy and transmit it to load center. Alternative costs are computed on the basis of annual equivalents and converted to present worth using 2½ percent interest and the 50-year period (1964–2013).

[9] Separable costs are computed as follows:

[In thousands of dollars]

	Irrigation	Commercial power, Pacific Gas & Electric Co.	Fish and Wildlife		Recreation
			Reimbursable	Nonreimbursable	
Cost to be allocated	257,578	257,578	257,578	257,578	257,578
Less remaining project construction cost	−157,797	−192,505	−227,868	−228,091	−228,717
Less operation, maintenance, and replacement of remaining project	−8,228	−27,965	−28,359	−28,448	−28,646
Separable cost	91,553	37,108	1,351	1,039	215

[10] The assignment of joint costs to each project purpose is 0.724436364 of the remaining benefits ($126,312,000/$174,359,000).

[11] Operation, maintenance, and replacement is assigned to reimbursable project purposes only.

ENCLOSURE NO. 2. SUPPORTING DATA FOR COST ALLOCATION ANALYSES FOR BOTH FEDERAL DEVELOPMENT AND JOINT DEVELOPMENT

(Enclosure No. 2 is not reproduced here. It is in the committee's files.)

ENCLOSURE NO. 3. OPERATION STUDIES FOR ALL-FEDERAL DEVELOPMENT AND FOR JOINT DEVELOPMENT

(Only table 4 of the eight tables that make up the all-Federal operation study (operation study No. 75–G) is reproduced herein. Table 4 shows the power system repayment study for all-Federal development. Table 1, which shows the power system repayment study for joint development, is identical to table 4 of enclosure No. 1 and is therefore not reproduced. Tables 2 and 3 which show the water requirements used in operation study 75–G, tables 5 and 6 which show a summary of the power generation and use computations supporting the estimated project dependable capacity under all-Federal development, and tables 7 and 8 which are the actual operation studies under all-Federal development are in the committee's files. The Pacific Gas & Electric Co.'s summary of estimated annual energy output under joint development is included but the supporting operation study (study T–3) is not reproduced. A copy of this study is in the committee's files.)

The repayment study for the joint development (table 1 enclosed) assumes operation of the Trinity River powerplants and payment therefrom as shown in the attached letter of December 10, 1956, from Pacific Gas & Electric Co. A controlling criterion for these estimates is coordination of Trinity, Whiskeytown, Shasta, and Folsom Reservoirs in a manner to meet the mandatory water requirements shown on tables 2 and 3.

Corresponding estimates for the all-Federal repayment study (table 4) are based on the power operations enclosed as tables 5 and 6. These in turn, were prepared by reference to the water-operation studies shown on tables 7 and 8.

Further explanations for tables 5 and 6 may be helpful. They present a summary of the power generation and use computations for years 1979 and 2013, made in supporting the estimate of 730,000 kilowatts of project dependable capacity as indicated on table 4. The dependable capacity is limited by total energy generation and remains constant throughout the period 1966–2013. The monthly requirements for energy are pursuant to article 10 of contract 175r–3428, table 1A for the existing plants and table 1B reduced by 20 percent for the Trinity plants. For capacity available January through June and July through December of each year a total of 820 and 1960 kilowatt-hours per kilowatt are required for the respective periods. Of the total 730,000 kilowatts, dependable capacity of 650,000 kilowatts is assumed sold to preference agencies and 80,000 kilowatts is available for sale to Pacific Gas & Electric Co. as indicated on page 71 of the report.

The project dependable capacity has been estimated as the lowest power capacity available in any month from project plants during the period 1930–33 supported by the amounts of energy as indicated in the paragraph above, after excluding the estimated energy required for project pumping requirements.

The average annual usable energy generation of the Central Valley project powerplants including the Trinity River division for conditions of ultimate development (fiscal year 2013) were estimated as follows:

Plant	Diversions through powerplant (acre-feet per year)	Kilowatt-hours per acre-foot	Usable generation (million kilowatt-hours)
Shasta	4,620,000	368	1,700
Keswick	5,330,000	76	405
Folsom	2,000,000	260	520
Nimbus	1,185,000	38	45
Trinity	930,000	317	295
Clear Creek	820,000	500	410
Spring Creek	860,000	472	405
Total			3,780

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1	2	3	4	5	6	7	8	9	10
		Sale of Electric Energy—Kilowatt-hours				Operating Revenues			
Year of Study	Fiscal Year	Project Use	Sale of Project Surplus Energy		Total Cols. 3, 4, & 5	Project Use $	Surplus		Other Electric Revenue $
			Firm	Non-firm			Firm $	Non-firm $	
	1943								
	1944								
1	1945		215,130,507	513,374,934	728,505,441		1,079,574	770,062	68,750
2	1946	2,792,000	800,110,000	647,746,234	1,450,648,234	6,980	2,699,625	971,619	75,000
3	1947	3,672,000	800,722,966	494,009,873	1,298,404,839	9,180	2,704,580	741,015	76,122
4	1948	4,792,000	800,358,993	539,492,257	1,344,643,250	11,980	2,801,732	969,781	75,000
5	1949	9,158,058	1,615,315,483	0	1,624,473,541	27,950	6,492,953	0	791,671
6	1950	9,725,325	1,721,241,245	0	1,730,966,570	26,456	9,314,271	0	(9,574)
7	1951	12,105,066	2,195,025,115	0	2,207,130,181	30,263	10,480,630	0	19,568
8	1952	59,906,166	1,937,419,813	513,803,597	2,511,129,576	149,834	8,283,251	1,461,221	87,986
9	1953	136,461,092	1,407,034,280	655,532,532	2,199,027,904	341,429	6,372,284	2,014,224	97,233
10	1954	212,700,110	1,150,730,787	1,160,673,440	2,524,104,337	532,117	5,932,315	2,633,539	139,221
11	1955	263,926,857	1,314,878,686	462,348,741	2,041,154,284	660,105	6,306,622	1,154,083	231,309
12	1956	180,379,045	1,427,645,334	1,089,221,091	2,697,245,470	451,037	6,634,606	2,776,568	126,466
							−7,034	−42,874	−13,161
Prior Year Adjustments Subtotals thru 1956		(895,617,719)	(15,385,613,209)	(6,076,202,699)	(22,357,433,627)	(2,247,331)	(69,095,409)	(13,649,238)	(1,765,591)
13	1957	321,000,000	2,071,000,000	412,000,000	2,804,000,000	803,000	9,379,000	1,193,000	90,000
14	1958	334,000,000	2,078,000,000	306,000,000	2,718,000,000	835,000	9,347,000	899,000	96,000
15	1959	344,000,000	2,152,000,000	261,000,000	2,757,000,000	860,000	9,493,000	791,000	98,000
16	1960	349,000,000	2,190,000,000	201,000,000	2,740,000,000	873,000	9,393,000	528,000	143,000
17	1961	361,000,000	2,190,000,000	201,000,000	2,752,000,000	903,000	9,393,000	528,000	143,000
18	1962	373,000,000	2,190,000,000	201,000,000	2,764,000,000	933,000	9,393,000	528,000	143,000
19	1963	386,000,000	2,190,000,000	201,000,000	2,777,000,000	965,000	9,393,000	663,000	143,000
20	1964	399,000,000	2,175,000,000	215,000,000	2,789,000,000	998,000	9,263,000	662,000	143,000
21	1965	404,000,000	2,175,000,000	213,000,000	2,792,000,000	1,010,000	9,263,000	658,000	139,000
22	1966	410,000,000	2,212,000,000	176,000,000	2,798,000,000	1,025,000	9,548,000	552,000	
23	1967	415,000,000	2,212,000,000	176,000,000	2,803,000,000	1,038,000	9,548,000	552,000	
24	1968	418,000,000	2,212,000,000	176,000,000	2,806,000,000	1,045,000	9,548,000	523,000	
25	1969	419,000,000	2,212,000,000	176,000,000	2,807,000,000	1,048,000	9,548,000	523,000	
26	1970	420,000,000	2,195,000,000	193,000,000	2,808,000,000	1,050,000	9,412,000	555,000	
27	1971	422,000,000	2,195,000,000	193,000,000	2,810,000,000	1,055,000	9,412,000	555,000	
28	1972	423,000,000	2,195,000,000	193,000,000	2,811,000,000	1,058,000	9,412,000	527,000	
29	1973	424,000,000	2,195,000,000	193,000,000	2,812,000,000	1,060,000	9,412,000	527,000	
30	1974	426,000,000	2,179,000,000	209,000,000	2,814,000,000	1,065,000	9,278,000	557,000	
31	1975	427,000,000	2,179,000,000	209,000,000	2,815,000,000	1,068,000	9,278,000	557,000	
32	1976		2,179,000,000	209,000,000			9,278,000	557,000	
33	1977		2,179,000,000	209,000,000			9,278,000	557,000	
34	1978		2,163,000,000	225,000,000			9,145,000	588,000	
35	1979		2,163,000,000	225,000,000			9,145,000	588,000	
36	1980		2,163,000,000	225,000,000			9,145,000	588,000	
37	1981		2,163,000,000	225,000,000			9,145,000	588,000	
38	1982		2,146,000,000	242,000,000			9,008,000	620,000	
39	1983		2,146,000,000	242,000,000			9,008,000	620,000	
40	1984		2,146,000,000	242,000,000			9,008,000	620,000	
41	1985		2,146,000,000	242,000,000			9,008,000	620,000	
42	1986		2,130,000,000	258,000,000			8,874,000	650,000	
43	1987								
44	1988								
45	1989								
46	1990								
47	1991								
48	1992								
49	1993								
50	1994								
51	1995								
52	1996								
53	1997								
54	1998								
55	1999								
56	2000								
57	2001								
58	2002								
59	2003								
60	2004								
61	2005								
62	2006								
63	2007								
64	2008								
65	2009								
66	2010								
67	2011								
68	2012								
69	2013	427,000,000	2,130,000,000	258,000,000	2,815,000,000	1,068,000	8,874,000	650,000	139,000
TOTAL		24,596,617,719	138,016,613,209	19,691,202,699	182,304,433,627	61,523,331	587,448,409	49,673,238	9,575,591

Notes:

Column 3.—The energy for project use includes service to the Contra Costa Canal, Delta-Mendota Canal, Folsom, Shasta, and Friant areas, and the Sacramento Canals.

Column 4.—The amounts of energy listed under firm include project surplus energy plus support energy purchased when the energy available in any one month is less than the energy required for preferency agency firm load. Folsom and Nimbus powerplants commenced operation during F. Y. 1955 and it is estimated Trinity will begin operation in F. Y. 1963. The total dependable surplus capacity for the Central Valley Project plants has been estimated at 400,000 kilowatts, under conditions of full irrigation development, and at variable amounts during the Development period.

Column 10.—Includes collections from customers for wheeling surcharge, apparatus maintenance and an allocated portion of non-operating revenues. Under ultimate conditions Column 10 includes:

Wheeling surcharge (Acct. 644.1)	$121,000
Non-operating income allocated to power operations (Acct. 580, 581)	18,000
Total	$139,000

Column 11.—Payment for Trinity River Division falling water as per P. G. & E. Company offer in their letter of December 10, 1956.

Columns 13 and 14.—Energy to su
at a rate equal to 1.15 times the aver
to the Company.

Column 15.—The wheeling transmi
the customer as the surcharge shown i
the energy rate. The wheeling servic
as follows:

Normal Charge (Acct.
Surcharge (Acct. 753
Total

Column 16.—Provisions for replac
for replacement chargeable to power

F. P. C. Account Numbers	
322	Reservoir and Wa
321–326	Hydroelectric Plan
342–349	Transmission Plan
371–379	General Plant (al
	Total

98574 O—57 (face p. 8) No. 1

	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	Revenues			Operating Revenue Deductions								Investment Re		
				Purchased Power								Interest Bearing Allocation To Commer		
	Other Electric Revenue $	Trinity Power Water $	Total Cols. 7, 8, 9, 10 & 11 $	Kilowatt-hours	Cost $	Wheeling Charge $	Provisions for Replacement $	All Other Electric Operation & Maintenance Expenses	Total Cols. 14, 15, 16 & 17 $	Prior Year Adjustments $	Net Revenues $	Interest 3% $	Principal $	In Serv End of $
	68,750		1,918,386				83,377	274,614	357,991		1,560,395	411,406	1,148,989	2,21 13,71 15,66
	75,000		3,753,224				83,377	365,434	448,811		3,304,413	435,579	2,868,834	15,98
	76,122		3,530,897				83,377	457,778	541,155		2,989,742	359,008	2,630,734	16,05
	75,000		3,858,493				576,062	679,350	1,255,412		2,603,081	282,290	2,320,791	24,58
	791,671		7,312,574				207,351	657,999	865,350		6,447,224	534,816	5,912,408	34,65
	(9,574)		9,331,153				70,519	672,276	742,795		8,588,358	593,070	7,995,288	52,74
	19,568		10,530,461				390,200	986,180	1,376,380		9,154,081	896,168	8,257,913	61,68
	87,986		9,982,292			172,307	410,000	1,167,235	1,749,542		8,232,750	916,561	7,316,189	78,49
	97,233		8,825,170			260,775	592,400	972,922	1,826,097		6,999,073	1,201,211	5,797,862	80,81
	139,221		9,437,192			322,829	402,000	687,319	1,612,148	—49,908	7,775,136	1,096,911	6,678,225	85,06
	231,309		8,352,119	35,485,004	212,817	1,321,695	429,000	959,624	2,923,136	— 789	5,428,194	1,024,246	4,403,948	99,51
8	126,466		9,988,677	3,389,930	9,933	1,255,809	397,600	1,340,493	3,003,835	—37,508	6,947,334	1,325,647	5,621,687	134,28
4	—13,161		—63,069					25,136	25,136	88,205				
)	(1,765,591)		(86,757,569)	(38,874,934)	(222,750)	(3,333,415)	(3,725,263)	(9,446,360)	(16,727,788)	0	(70,029,781)	(9,076,913)	(60,952,868)	(134,28
	90,000		11,465,000	0		586,000	666,800	1,638,114	2,890,914	0	8,574,086	2,199,904	6,374,182	133,76
	96,000		11,177,000	15,000,000	43,800	646,000	686,000	1,633,954	3,009,754		8,167,246	1,993,259	6,173,987	133,78
	98,000		11,242,000	129,000,000	382,000	658,000	686,000	1,631,337	3,357,337		7,884,663	1,808,549	6,076,114	133,85
	143,000		10,937,000	322,000,000	950,000	781,000	686,000	1,543,000	3,960,000		6,977,000	1,628,365	5,348,635	136,16
	143,000		10,967,000	322,000,000	950,000	781,000	686,000	1,543,000	3,960,000		7,007,000	1,537,086	5,469,914	136,16
	143,000		10,997,000	322,000,000	947,000	781,000	686,000	1,543,000	3,957,000		7,040,000	1,373,109	5,666,891	226,31
	143,000		11,164,000	292,000,000	856,000	781,000	688,000	1,677,000	4,002,000		7,162,000	3,907,422	3,254,578	228,56
	143,000		11,066,000	342,000,000	1,002,000	781,000		1,716,000	4,187,000		6,879,000	3,877,375	3,001,625	
	139,000		11,070,000	347,000,000	1,017,000	774,000			4,195,000		6,875,000	3,787,326	3,087,674	
		4,788,000	16,052,000	323,000,000	946,000				4,124,000		11,928,000	3,694,696	8,233,304	
		4,788,000	16,065,000	328,000,000	961,000				4,139,000		11,926,000	3,447,697	8,478,303	
		4,788,000	16,043,000	331,000,000	970,000				4,148,000		11,895,000	3,193,348	8,701,652	
		4,788,000	16,046,000	332,000,000	976,000				4,154,000		11,892,000	2,932,298	8,959,702	
		4,788,000	15,944,000	333,000,000	979,000				4,157,000		11,787,000	2,663,507	9,123,493	
		4,788,000	15,949,000	335,000,000	985,000				4,163,000		11,786,000	2,389,802	9,396,198	
		4,788,000	15,924,000	336,000,000	988,000				4,166,000		11,758,000	2,107,916	9,650,084	
		4,788,000	15,926,000	337,000,000	991,000				4,169,000		11,757,000	1,818,414	9,938,586	
		4,788,000	15,827,000	339,000,000	997,000				4,175,000		11,652,000	1,520,256	10,131,744	
		4,788,000	15,830,000	340,000,000	1,000,000				4,178,000		11,652,000	1,216,304	10,435,696	
		4,788,000	15,830,000		1,000,000				4,178,000		11,652,000	903,233	10,748,767	
		4,788,000	15,830,000		1,000,000				4,178,000		11,652,000	580,770	11,071,230	
		4,788,000	15,728,000		996,000				4,174,000		11,554,000	248,633	0,287,773	
		4,788,000	15,728,000		996,000				4,174,000		11,554,000	0	0	
		4,788,000	15,728,000		996,000				4,174,000		11,554,000			
		4,788,000	15,623,000		989,000				4,167,000		11,456,000			
		4,788,000	15,623,000								11,456,000			
		4,788,000	15,623,000								11,456,000			
		4,788,000	15,623,000								11,456,000			
0		4,788,000	15,519,000								11,352,000			
		4,788,000	15,519,000								11,352,000			
		4,788,000	15,519,000								11,352,000			
		4,446,000	15,177,000								11,010,000			
00	139,000	4,446,000	15,177,000	340,000,000	989,000	774,000	688,000	1,716,000	4,167,000	0	11,010,000	0	0	228,56
08	9,575,591	221,274,000	929,494,569	18,383,000,000	53,795,550	47,054,415	42,910,063	106,455,765	250,215,793	0	679,278,776	57,906,182	228,563,000	228,56

and 14.—Energy to support firm load is purchased from the Pacific Gas and Electric Company to 1.15 times the average price per kilowatt-hour for the accumulated total of all energy sold

—The wheeling transmission service expense includes the excess wheeling charge passed on to s the surcharge shown in Column 10 plus the normal charge recouped by the Bureau as part of . The wheeling service charges to power after assumed completion of the system are estimated

Normal Charge (Acct. 753.11)	$653,000
Surcharge (Acct. 753.12)	121,000
Total	$774,000

—Provisions for replacement are computed on a 3 percent sinking fund basis. The provisions t chargeable to power after assumed completion of the system are estimated as follows:

Account Numbers		
	Reservoir and Waterways (allocated portion)	$23,000
5	Hydroelectric Plant	430,000
9	Transmission Plant	225,000
9	General Plant (allocated portion)	10,000
	Total	$688,000

Column 17.—The annual operation, maintenance, and overhead costs chargeable to power operation after completion of the power system are estimated as follows:

Production Plant	
Operation	$455,000
Maintenance	358,000
Administration and General	277,000
Subtotal	$1,090,000
Transmission Systems	
Operation	$171,000
Maintenance	188,000
Administration and General	116,000
Subtotal	$475,000
Other	
Nimbus Fish Protection Facilities	$68,000
Non-operating allocated to power	83,000
Subtotal	$151,000
Total	$1,716,000

16	17	18	19	20	21	22	23	24	25	26	
Deductions					Investment Repayment From Power Revenues						
					Interest Bearing Allocation To Commercial Electric Plant				Interest Free Aid to Irrigation Plant		
ovisions for lacement $	All Other Electric Operation & Maintenance Expenses	Total Cols. 14, 15, 16 & 17 $	Prior Year Adjustments $	Net Revenues $	Interest 3% $	Principal $	In Service at End of Year $	Balance to be Repaid $	Required Aid $	Balance to be Repaid $	C
							2,215,833	2,215,833			
							13,713,533	13,713,533			
83,377	274,614	357,991		1,560,395	411,406	1,148,989	15,668,300	14,519,311			
83,377	365,434	448,811		3,304,413	435,579	2,868,834	15,984,762	11,966,939			
83,377	457,778	541,155		2,989,742	359,008	2,630,734	16,058,233	9,409,676			
76,062	679,350	1,255,412		2,603,081	282,290	2,320,791	24,580,701	15,611,353			
07,351	657,999	865,350		6,447,224	534,816	5,912,408	34,650,756	19,769,000			
70,519	672,276	742,795		8,588,358	593,070	7,995,288	52,749,295	29,872,251			
90,200	986,180	1,376,380		9,154,081	896,168	8,257,913	61,686,975	30,552,018			
10,000	1,167,235	1,749,542		8,232,750	916,561	7,316,189	78,491,500	40,040,354			
92,400	972,922	1,826,097		6,999,073	1,201,211	5,797,862	80,812,702	36,563,694			
02,000	687,319	1,612,148	−49,908	7,775,136	1,096,911	6,678,225	85,068,750	34,141,517			
29,000	959,624	2,923,136	− 789	5,428,194	1,024,246	4,403,948	99,519,420	44,188,239			
97,600	1,340 493	3,003,835	−37,508	6,947,334	1,325,647	5,621,687	134,283,000	73,330,132			
	25,136	25,136	88,205								
25,263)	(9,446,360)	(16,727,788)	0	(70,029,781)	(9,076,913)	(60,952,868)	(134,283,000)	(73,330,132)			
66,800	1,638,114	2,890,914	0	8,574,086	2,199,904	6,374,182	133,769,000	66,441,950			
86,000	1,633,954	3,009,754		8,167,246	1,993,259	6,173,987	133,786,000	60,284,963			
86,000	1,631,337	3,357,337		7,884,663	1,808,549	6,076,114	133,856,000	54,278,849			
86,000	1,543,000	3,960,000		6,977,000	1,628,365	5,348,635	136,162,000	51,236,214			
86,000	1,543,000	3,960,000		7,007,000	1,537,086	5,469,914	136,166,000	45,770,300			
86,000	1,543,000	3,957,000		7,040,000	1,373,109	5,666,891	226,310,000	130,247,409			
88,000	1,677,000	4,002,000		7,162,000	3,907,422	3,254,578	228,563,000	129,245,831			
	1,716,000	4,187,000		6,879,000	3,877,375	3,001,625		126,244,206			
		4,195,000		6,875,000	3,787,326	3,087,674		123,156,532			
		4,124,000		11,928,000	3,694,696	8,233,304		114,923,228			
		4,139,000		11,926,000	3,447,697	8,478,303		106,444,925			
		4,148,000		11,895,000	3,193,348	8,701,652		97,743,273			
		4,154,000		11,892,000	2,932,298	8,959,702		88,783,571			
		4,157,000		11,787,000	2,663,507	9,123,493		79,660,078			
		4,163,000		11,786,000	2,389,802	9,396,198		70,263,880			
		4,166,000		11,758,000	2,107,916	9,650,084		60,613,796			
		4,169,000		11,757,000	1,818,414	9,938,586		50,675,210			
		4,175,000		11,652,000	1,520,256	10,131,744		40,543,466			
		4,178,000		11,652,000	1,216,304	10,435,696		30,107,770			
		4,178,000		11,652,000	903,233	10,748,767		19,359,003			
		4,178,000		11,652,000	580,770	11,071,230		8,287,773			
		4,174,000		11,554,000	248,633	8,287,773		0	113,550,000	110,532,406	
		4,174,000		11,554,000	0	0				98,978,406	
		4,174,000		11,554,000						87,424,406	
		4,174,000		11,554,000						75,870,406	
		4,167,000		11,456,000						64,414,406	
				11,456,000						52,958,406	
				11,456,000						41,502,406	
				11,456,000						30,046,406	
				11,352,000						18,694,406	
				11,352,000						7,342,406	
				11,352,000						0	
				11,010,000							
88,000	1,716,000	4,167,000	0	11,010,000	0	0	228,563,000	0	113,550,000	0	
10,063	106,455,765	250,215,793	0	679,278,776	57,906,182	228,563,000	228,563,000	0	113,550,000	0	

Column 17 — The annual operation, maintenance, and overhead costs chargeable to power operation after completion of the power system are estimated as follows:

Production Plant	
Operation	$455,000
Maintenance	358,000
Administration and General	277,000
Subtotal	$1,090,000
Transmission Systems	
Operation	$171,000
Maintenance	188,000
Administration and General	116,000
Subtotal	$475,000
Other	
Nimbus Fish Protection Facilities	$68,000
Non-operating allocated to power	83,000
Subtotal	$151,000
Total	$1,716,000

Column 21 — Interest is calculate
the previous year (Column 24). Th

Column 27 — Surplus shown as a
Reservoir, and Powerplant) are place

TABLE 4

CENTRAL VALLEY PROJECT—CALIFORNIA

WER SYSTEM AVERAGE RATE AND REPAYMENT STUDY

INCLUDING P. G. & E. CO. OFFER FOR TRINITY FALLING WATER

26	27	28	29	30	31
f to t		Allowable Unpaid Balance			
alance to e Repaid $	Earned Surplus Cumulative $	Commercial Electric Plant $	Irrigation Plant $	Fiscal Year	Year of Study
		2,215,833		1943	
		13,713,533		1944	
		15,668,300		1945	1
		15,984,762		1946	2
		16,058,233		1947	3
		24,580,701		1948	4
		34,650,756		1949	5
		52,749,295		1950	6
		61,686,975		1951	7
		78,491,500		1952	8
		80,812,702		1953	9
		85,068,750		1954	10
		99,519,420		1955	11
		134,283,000		1956	12
				Prior Year Adjustments	
		(134,283,000)		Subtotal for 1956	
		133,769,000		1957	13
		133,786,000		1958	14
		133,856,000		1959	15
		136,162,000		1960	16
		136,166,000		1961	17
		226,310,000		1962	18
		228,563,000		1963	19
				1964	20
				1965	21
				1966	22
				1967	23
				1968	24
				1969	25
				1970	26
				1971	27
				1972	28
				1973	29
				1974	30
				1975	31
				1976	32
				1977	33
10,532,406			113,550,000	1978	34
28,978,406				1979	35
37,424,406				1980	36
75,870,406				1981	37
64,414,406				1982	38
52,958,406				1983	39
41,502,406				1984	40
30,046,406				1985	41
18,694,406				1986	42
7,342,406				1987	43
0	4,009,594			1988	44
	15,019,594			1989	45
	26,029,594			1990	46
	37,039,594			1991	47
	48,049,594	228,563,000		1992	48
	59,059,594	226,347,167		1993	49
	70,069,594	214,849,467		1994	50
	81,079,594	212,894,700		1995	51
	92,089,594	212,578,238		1996	52
	103,099,594	212,504,767		1997	53
	114,109,594	203,982,299		1998	54
	125,119,594	193,912,244		1999	55
	136,129,594	175,813,705		2000	56
	147,139,594	166,876,025		2001	57
	158,149,594	150,071,500		2002	58
	169,159,594	147,750,298		2003	59
	180,169,594	143,494,250		2004	60
	191,179,594	129,043,580		2005	61
	202,189,594	94,280,000		2006	62
	213,199,594	94,794,000		2007	63
	224,209,594	94,777,000		2008	64
	235,219,594	94,707,000		2009	65
	246,229,594	92,401,000		2010	66
	257,239,594	92,397,000		2011	67
	268,249,594	2,253,000	113,550,000	2012	68
0	279,259,594	0	0	2013	69
0	279,259,594	0	0	Total	

Interest is calculated at 3% per year on the unamortized interest-bearing investment at end of (Column 24). The 1949 figure includes $66,475 applicable to 1944.

Surplus shown as accumulating through the 50th year after the last major feature (Trinity Dam, werplant) are placed in service in F. Y. 1963.

Column 23. Estimated cost of authorized features are as shown on the construction control schedule dated PF–2 dated August 22, 1956, and the PF–2b of the same date, and the PF–2 Trinity River Division control schedule dated August 1956.

Multipurpose (with Allocation to Power)	
Shasta Dam and Reservoir	$119,905,240
Nimbus Dam and Reservoir (Lake Natoma)	6,835,182
Trinity Dam and Reservoir	83,123,000
Lewiston Dam and Reservoir	4,541,000
Clear Creek Conduit	38,540,000
Whiskeytown Dam and Reservoir	17,921,000
Folsom Dam U. S. B. R. Construction	595,685
General Property	6,427,432
Other (Without Allocation to Power)	311,721,066
Power Features	
Keswick Dam and Reservoir	8,931,436
Shasta Powerplant and Switchyard	22,153,672
Keswick Powerplant and Switchyard	11,388,811
Folsom Powerplant and Switchyard	22,682,807
Nimbus Powerplant and Switchyard	4,171,599
Folsom-Nimbus Line, 115–kv	148,946
Folsom Transmission Facilities 230–kv	2,533,448
Spring Creek Conduit	17,841,000
Tracy Switchyard	6,671,000
Shasta-Tracy East Side Line, 230–kv	6,281,469
Shasta-Tracy West Side Lines, 230–kv	11,120,619
Tracy-Ygnacio Lines and Subs. (69 kv and 2.3 kv)	735,044
Preference Customer Metering Facilities	202,000
Central Valley Radio Networks	394,400
Cottonwood Metering Facilities	226,801
Shasta Area Service Line	2,251
Folsom Prison Service Line	20,776
Total Construction Cost on Control Schedules (Less the Trinity Power features)	$705,115,684
Folsom Dam Corps of Engineers Construction	61,870,300
Project Investigations	892,625
	$767,878,609
Not included in Repayment Analysis (Water Distribution System)	66,065,218
Total Used in Repayment Analysis	$701,813,391

Following is the cost allocation and probable repayment of the Central Valley Project features:

Item	Cost Allocation	Probable Repayment
Nonreimbursable		
Navigation	$12,940,000	
Flood Control	35,684,000	
Fish and Wildlife	11,628,000	
Recreation	215,000	
Total Nonreimbursable	$60,467,000	
Reimbursable		
Irrigation	$392,559,000	$279,160,300
Municipal and Industrial Water	17,419,000	17,576,400[a]
Commercial Power	228,563,000	342,113,000[b]
Fish and Wildlife	2,805,000	2,496,300
Total Reimbursable	$641,346,000	$641,346,000
Grand Total	$701,813,000	
[a] Irrigation aid from M&I water sales		$157,400
[b] Irrigation aid from Power Sales		113,241,300
Fish and Wildlife aid from Power sales		308,700
Total (See Col. 25)		$113,550,000

December 20, 1956

CENTRAL VALLEY PROJECT
POWER SYSTEM AVERAGE RATE AND REPAYMENT STUDY

AVERAGE POWER RATE USED TO COVER REVENUE DEDUCTIONS AND THE RETURN OF COSTS TO BE BO

PRELIMINARY

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
		Sale of Electric Energy - Kilowatt-Hours				Operating Revenues					Operating Revenue Deductions							
			Sale of Project Surplus Energy				Surplus				Purchased Power				All Other Electric Operation & Maintenance Expenses			
Year of Study	Fiscal Year	Project Use	Firm	Non-Firm	Total Cols. 3, 4, & 5	Project Use $	Firm 4.5 Mills Per kwh $	Non-Firm $	Other Electric Revenues $	Total Cols. 7, 8, 9, & 10 $	Kilowatt-Hours	Cost $	Wheeling Charge $	Provisions For Replacement $		Total Cols. 12, 14, 15 & 16 $	Prior Year Adjustments $	Net Revenue $
	1943																	
	1944																	
1	1945		215,130,507	513,374,234	728,505,441		1,079,574	77,062	68,750	1,918,386				83,377	274,614	357,991		1,560,395
2	1946	2,792,000	800,110,000	647,746,234	1,450,648,234	5,980	3,699,605	971,619	75,000	4,753,204				83,377	365,434	448,811		3,304,393
3	1947	3,672,000	800,722,966	494,009,873	1,298,404,839	9,180	2,704,580	741,015	76,142	3,530,897				83,377	457,78	541,155		2,989,742
4	1948	4,792,000	800,358,993	539,492,257	1,344,643,250	11,980	2,801,732	969,781	75,000	3,858,493				576,062	679,350	1,255,412		2,603,081
5	1949	9,158,058	1,615,315,483	0	1,624,473,541	27,750	6,492,153	0	791,671	7,312,574				207,351	657,999	865,35		6,447,224
6	1950	9,755,325	1,721,241,245	0	1,730,966,570	26,666	9,314,271	0	(2,574)	9,331,153				70,519	672,276	742,795		8,588,358
7	1951	12,105,066	2,195,025,113	0	2,207,130,180	30,263	10,480,530	0	19,568	10,530,361				390,200	986,160	1,376,380		9,154,044
8	1952	59,906,166	1,937,489,813	513,803,597	2,511,199,576	149,834	8,283,251	1,461,221	87,585	9,982,292			172,307	410,000	1,167,235	1,749,542		8,232,750
9	1953	136,461,092	1,467,034,280	695,532,532	2,199,027,904	341,429	6,372,284	2,014,24	97,233	8,825,170			266,775	542,400	972,922	1,826,097		6,999,073
10	1954	212,700,110	1,150,730,787	1,160,673,446	2,524,104,337	532,117	5,930,315	2,833,539	139,221	9,437,192			322,829	402,000	887,319	1,612,148	-49,306	7,775,350
11	1955	263,326,857	1,314,876,686	462,148,741	2,041,154,284	660,105	6,306,602	1,155,063	231,309	8,353,119				429,000	959,624	2,923,136	- 789	5,428,172
12	1956	180,379,045	1,427,645,334	1,089,221,091	2,697,245,470	451,037	6,634,606	2,776,568	126,466	9,988,677	3,389,930	9,533	1,755,809	397,600	1,340,493	3,003,835	-37,508	6,947,350
Prior Year Adjustments							-7,034	-40,874	-13,161	-63,069					25,136	25,136	88,205	
Subtotal thru 1956		(895,617,719)		(6,076,202,699)	(22,357,433,627)	(2,247,331)	(69,095,409)	(13,649,238)	(1,765,591)	(86,757,569)	(38,874,934)	(22,750)	(3,333,415)	(3,725,263)	(9,446,360)	(16,727,788)	0	(70,029,781)
13	1957	321,000,000	2,071,000,000	413,000,000	2,804,000,000	803,000	9,379,000	1,193,000	90,000	11,465,000	0	0	586,000	666,800	1,638,114	2,890,914		8,574,086
14	1958	334,000,000	2,078,000,000	306,000,000	2,718,000,000	835,000	9,342,000	891,000	96,000	11,177,000	15,000,000	43,800	646,000	666,000	1,633,954	3,009,754		8,167,246
15	1959	344,000,000	2,152,000,000	261,000,000	2,757,000,000	860,000	9,693,000	791,000	98,000	11,442,000	129,000,000	342,000	658,000	666,000	1,631,337	3,357,337		8,084,663
16	1960	349,000,000	2,190,000,000	201,000,000	2,740,000,000	873,000	9,393,000	608,000	141,000	10,917,000	320,000,000	956,000	789,000	686,000	1,634,000	3,229,000		7,688,000
17	1961	361,000,000	2,190,000,000	186,000,000	2,737,000,000	903,000	9,393,000	560,000	143,000	10,999,000	322,000,000	962,000	795,000	686,000	1,634,000	3,316,000		7,683,000
18	1962	373,000,000	2,190,000,000	173,000,000	2,736,000,000	933,000	9,393,000	475,000	143,000	10,944,000	322,000,000	947,000	795,000	686,000	1,634,000	3,361,000		7,583,000
19	1963	386,000,000	2,190,000,000	492,000,000	3,068,000,000	965,000	9,393,000	1,417,000	143,000	11,918,000	154,000,000	451,000	798,000	1,114,000	2,271,000	4,634,000		7,284,000
20	1964	399,000,000	2,175,000,000	492,000,000	3,066,000,000	998,000	9,263,000	1,417,000	143,000	11,821,000	154,000,000	450,000	801,000		2,310,000	4,675,000		7,146,000
21	1965	404,000,000	2,175,000,000	487,000,000	3,066,000,000	1,010,000	9,263,000	1,408,000	139,000	11,820,000	154,000,000	448,000	796,000			4,668,000		7,152,000
22	1966	410,000,000	3,100,000,000	400,000,000	3,910,000,000	1,025,000	14,060,000	1,808,000	258,000	17,151,000	406,000,000	1,148,000	1,285,000			5,844,800		10,497,200
23	1967	415,000,000		396,000,000	3,911,000,000	1,038,000		990,800		16,196,000	418,000,000	1,204,000	1,273,000			5,901,800		10,466,200
24	1968	418,000,000		395,000,000	3,913,000,000	1,045,000		988,000		16,353,000	420,000,000	1,205,000	1,275,000			5,904,800		10,448,200
25	1969	419,000,000		395,000,000	3,914,000,000	1,048,000		988,000		16,354,000	421,000,000	1,200,000	1,276,000			5,905,000		10,449,000
26	1970	420,000,000		394,000,000	3,914,000,000	1,050,000		988,000		16,354,000	421,000,000	1,196,000	1,277,000			5,907,800		10,447,200
27	1971	422,000,000		393,000,000	3,915,000,000	1,055,000		984,800		16,347,000	422,000,000	1,194,000	1,279,000			5,937,800		10,409,200
28	1972	423,000,000		392,000,000	3,915,000,000	1,056,000		982,800		16,357,000	423,000,000	1,191,000	1,280,000			5,897,800		10,461,200
29	1973	424,000,000		392,000,000	3,916,000,000	1,060,000		982,800		16,360,000	424,000,000	1,191,000	1,281,000			5,897,800		10,463,200
30	1974	426,000,000		391,000,000	3,917,000,000	1,065,000		980,800		16,361,000	425,000,000	1,189,000	1,283,000			5,898,800		10,462,200
31	1975	427,000,000		391,000,000	3,918,000,000	1,068,000		980,800		16,366,000	425,000,000	1,187,000	1,284,000			5,899,800		10,474,200
32	1976	427,000,000		391,000,000	3,918,000,000	1,068,000		980,800		16,366,000	425,000,000	1,185,000	1,285,000			5,894,800		10,479,200
33	1977			391,000,000	3,918,000,000			980,800		16,366,000	425,000,000	1,182,000				5,891,800		10,475,200
34	1978			391,000,000	3,918,000,000			980,800		16,366,000	425,000,000	1,180,000				5,889,800		10,477,200
35	1979			391,000,000	3,918,000,000			980,800		16,366,000	425,000,000	1,176,000				5,885,800		10,481,200
36	1980			391,000,000	3,918,000,000			980,800		16,366,000	425,000,000	1,172,000				5,881,800		10,485,200
37	1981			391,000,000	3,918,000,000			980,800		16,366,000	425,000,000	1,168,000				5,877,800		10,489,200
38	1982			391,000,000	3,918,000,000			980,800		16,366,000	425,000,000	1,164,000				5,873,800		10,493,200
39	1983			391,000,000	3,918,000,000			980,800		16,366,000	425,000,000	1,160,000				5,869,800		10,497,200
40	1984			391,000,000	3,918,000,000			980,800		16,366,000	425,000,000	1,156,000				5,865,800		10,501,200
41	1985			391,000,000	3,918,000,000			980,800		16,366,000	425,000,000	1,152,000				5,861,800		10,505,200
42	1986			391,000,000	3,918,000,000			980,800		16,366,000	425,000,000	1,150,000				5,859,800		10,507,200
43	1987			391,000,000	3,918,000,000			980,800		16,366,000	425,000,000							10,507,200
44	1988			391,000,000	3,918,000,000			980,800		16,366,000	425,000,000							10,507,200
45	1989			390,000,000	3,917,000,000			978,800		16,364,000	426,000,000							10,505,200
46	1990			389,000,000	3,916,000,000			977,800		16,363,000								10,503,200
47	1991			388,000,000	3,915,000,000			975,800		16,361,000								10,503,200
48	1992			387,000,000	3,914,000,000			973,800		16,359,000								10,500,200
49	1993			386,000,000	3,913,000,000			971,800		16,357,000								10,498,200
50	1994			389,000,000	3,912,000,000			969,800		16,355,000								10,496,200
51	1995			384,000,000	3,911,000,000			967,800		16,353,000								10,494,200
52	1996			384,000,000	3,911,000,000			967,800		16,353,000								10,494,200
53	1997			383,000,000	3,910,000,000			965,800		16,351,000								10,493,200
54	1998			382,000,000	3,909,000,000			963,800		16,349,000								10,490,200
55	1999			381,000,000	3,908,000,000			961,800		16,347,000								10,488,200
56	2000			380,000,000	3,907,000,000			960,800		16,346,000								10,487,200
57	2001			379,000,000	3,906,000,000			958,800		16,344,000								10,485,200
58	2002			379,000,000	3,906,000,000			958,800		16,344,000								10,485,200
59	2003			378,000,000	3,905,000,000			956,800		16,342,000								10,483,200
60	2004			377,000,000	3,904,000,000			954,800		16,340,000								10,481,200
61	2005			376,000,000	3,903,000,000			952,800		16,338,000								10,479,200
62	2006			375,000,000	3,902,000,000			950,800		16,336,000								10,477,200
63	2007			374,000,000	3,901,000,000			948,800		16,334,000								10,475,200
64	2008			374,000,000	3,901,000,000			948,800		16,334,000								10,475,200
65	2009			372,000,000	3,899,000,000			944,800		16,330,000								10,471,200
66	2010			370,000,000	3,897,000,000			940,800		16,328,000								10,467,200
67	2011			368,000,000	3,895,000,000			937,800		16,323,000								10,464,200
68	2012			366,000,000	3,893,000,000			933,800		16,319,000								10,460,200
69	2013	427,000,000	3,100,000,000	364,000,000	3,891,000,000	1,068,000	14,060,000	929,800	258,000	16,315,000	426,000,000	1,150,000	1,285,000	1,114,000	2,310,000	5,859,000	0	10,456,000
Totals		24,596,617,719	183,596,613,209	27,579,202,699	235,772,433,627	61,523,331	828,292,409	68,806,238	15,287,591	973,911,569	28,000,874,934	60,646,550	71,605,415	64,636,063	136,722,765	333,610,793	0	640,300,776

Notes:

General - 1943-1956 data are historical from Bureau records. 1945 is the first year of record for Shasta Powerplant where actual operation started in June, 1944. Two generators purchased for Shasta were rented to Region 1 for use at Grand Coulee from February 25, 1943, to August 15, 1947. Payment ($749,951) covered in Column 10 for 1949. Annual figures for years before 1956 include adjustments for prior years. For 1954, 1955 and 1956 such adjustments are included only in the subtotals and in Column 18.

Column 3 - The energy for project use includes service to the Contra Costa Canal, Delta-Mendota Canal, Folsom, Shasta, and Friant areas, and the Sacramento Canals.

Column 4 - The amounts of energy listed under firm include project surplus energy plus support energy purchased when the energy available in any one month is less than the energy required for preforency agency firm load. Folsom and Nimbus powerplants commenced operation during F.Y. 1955 and it is estimated Trinity will begin operation in F.Y. 1963, with an increased dependable surplus capacity as supported by Pacific Gas and Electric Company. The total dependable surplus capacity has been estimated at 730,000 kilowatts.

Column 10 - Includes collections from customers for wheeling surcharge, apparatus maintenance and an allocated portion of non-operating revenues. Under ultimate conditions Column 10 includes:

Wheeling surcharge (Acct. 644.1)	$240,000
Non-operating income allocated to power operations (Acct. 580, 581)	18,000
Total	$258,000

Columns 12 & 13 - Energy to support firm load is purchased from the Pacific Gas and Electric Company at a rate equal to 1.15 times the average price per kilowatt-hour for the accumulated total of all energy sold to the Company.

Column 14 - The wheeling transmission service expense includes the excess wheeling charge passed on to the customer as the surcharge shown in Column 10 plus the normal charge recouped by the Bureau as part of the energy rate. The wheeling service charges to power after assumed completion of the system are estimated as follows:

Normal Charge (Acct. 753.11)	$1,045,000
Surcharge (Acct. 753.1)	240,000
Total	$1,285,000

Column 15 - Provisions for replacement are computed on a 3 percent sinking fund basis. The provisions for replacement chargeable to power after assumed completion of the system are estimated as follows:

F.P.C. Account Numbers		
322	Reservoir and Waterways (allocated portion)	$23,000
331-336	Hydroelectric Plant	770,000
340-346	Transmission Plant	311,000
371-379	General Plant (allocated portion)	10,000
	Total	$1,114,000

Column 16 - The amo
operation after completio

Production Plant	
Operation	
Maintenance	
Administration and	
Subt	
Transmission System	
Operation	
Maintenance	
Administration and	
Subt	
Other	
Nimbus Fish Protect	
Non-operating allow	
Subt	
Total	

98574 O—57 (Face p. 8) No. 2

STUDY

OSTS TO BE BORNE BY POWER

18	19	20	21	22	23	24	25	26	27	28	29	30
		Investment Repayment From Power Revenues										
		Interest Bearing Allocation to Commercial Electric Plant				Interest Free Aid to Irrigation Plant			Allowable Unpaid Balance			
rior ear stments $	Net Revenue $	Interest 3% $	Principal $	In Service at End of Year $	Balance to Be Repaid $	Required Aid $	Balance to Be Repaid $	Earned Surplus Cumulative $	Comm. Electric Plant $	Irrigation Plant $	Fiscal Year	Year of Study
				2,215,633	2,215,633				2,215,633		1943	
				13,713,533	13,713,533				13,713,533		1944	
	1,560,395	411,406	1,148,989	15,668,300	14,539,311				15,668,300		1945	1
	1,334,413	435,579	2,868,834	15,984,762	11,306,039				15,984,762		1946	2
	2,389,742	359,008	2,530,734	16,058,233	9,409,676				16,058,233		1947	3
	2,603,083	282,290	2,320,791	24,580,701	15,611,353				24,580,701		1948	4
	6,447,224	534,816	5,912,408	34,650,756	19,749,000				34,650,756		1949	5
	6,588,368	221,070	7,222,068	52,749,756	29,672,751				52,749,756		1950	6
	9,154,581	889,168	8,757,913	61,446,375	50,550,018				61,446,375		1951	7
	8,832,750	916,561	7,316,187	78,491,500	40,040,354				78,491,500		1952	8
	6,999,073	1,201,211	5,797,862	80,812,702	36,563,694				80,812,702		1953	9
-40,308	7,775,136	1,096,911	6,678,205	85,068,750	34,141,517				85,068,750		1954	10
- 789	5,426,194	1,004,246	4,403,248	99,519,420	44,188,239				99,519,420		1955	11
-37,508	6,947,334	1,325,647	5,621,687	134,283,000	73,330,132				134,283,000		1956	12
88,205										Prior Year Adjustments		
0	(70,029,781)	(9,076,913)	(60,952,868)	(134,283,000)	(73,330,132)				(134,283,000)	Subtotal thru 1956		
	8,574,086	2,199,904	6,374,182	136,179,080	68,851,950				136,179,000		1957	13
	8,167,246	2,065,599	6,101,647	136,196,000	62,767,263				136,196,000		1958	14
	7,884,663	1,883,018	6,001,645	136,268,000	56,837,618				136,268,000		1959	15
	6,370,000	1,706,139	5,779,871	138,325,000	52,731,747				138,325,000		1960	16
	6,377,000	1,581,860	5,390,148	138,325,000	48,775,599				134,328,060		1961	17
	6,382,000	1,466,262	5,515,738	209,138,000	193,568,861				289,138,000		1962	18
	7,284,000	5,807,060	1,476,940	292,037,000	194,900,721				292,037,000		1963	19
	7,146,000	5,849,722	1,296,278		193,604,443						1964	20
	7,137,000	5,810,831	1,341,167		192,263,276						1965	21
	10,477,000	5,770,598	4,706,402		187,556,874						1966	22
	10,446,000	5,628,806	4,816,194		182,810,680						1967	23
	10,447,000	5,484,320	4,962,680		177,848,000						1968	24
	10,464,000	5,335,840	5,128,560		172,719,440						1969	25
	10,457,000	5,181,883	5,275,117		167,444,323						1970	26
	10,466,000	5,020,630	5,436,370		162,017,953						1971	27
	10,461,000	4,860,539	5,600,461		156,417,492						1972	28
	10,463,000	4,692,525	5,770,475		150,647,017						1973	29
	10,467,000	4,519,411	5,947,589		144,699,428						1974	30
	10,471,000	4,340,983	6,130,017		138,569,411						1975	31
	10,472,000	4,157,082	6,314,918		132,254,493						1976	32
	10,475,000	3,967,635	6,507,365		125,747,128						1977	33
	10,477,000	3,772,414	6,704,586		119,042,542						1978	34
	10,481,000	3,571,276	6,909,724		112,132,818						1979	35
	10,485,000	3,363,965	7,121,212		105,011,803						1980	36
	10,489,000	3,150,354	7,338,042		97,673,157						1981	37
	10,463,000	2,930,195	7,562,805		90,110,352						1982	38
	10,497,000	2,703,311	7,793,689		82,316,663						1983	39
	10,501,000	2,469,500	8,031,500		74,285,163						1984	40
	10,505,000	2,228,546	8,276,454		66,008,716						1985	41
	10,507,000	1,980,358	8,526,738		57,481,980						1986	42
	10,507,000	1,724,459	8,781,541		48,699,439						1987	43
	10,507,000	1,460,983	9,046,017		39,653,422						1988	44
	10,509,000	1,189,603	9,319,397		30,334,025						1989	45
	10,514,000	910,141	9,603,792		20,744,166						1990	46
	10,520,000	622,325	9,897,675		10,846,491						1991	47
	10,556,000	325,535	10,174,065		672,426				292,037,000		1992	48
	10,446,000	20,711	672,426		0	105,528,000	95,741,139		289,821,167	105,528,000	1993	49
	10,496,000	0	0				85,249,139		278,323,467		1994	50
	10,494,000						74,751,139		276,364,700		1995	51
	10,494,000						64,257,139		276,592,238		1996	52
	10,498,000						53,764,139		275,976,787		1997	53
	10,500,000						43,275,139		267,956,299		1998	54
	10,488,000						32,787,139		257,386,244		1999	55
	10,487,000						22,300,139		252,287,705		2000	56
	10,485,000						11,815,139		230,350,025		2001	57
	10,485,000						1,330,139		213,545,500		2002	58
	10,483,000						0	9,152,861	211,324,256		2003	59
	10,481,000							19,633,861	206,368,250		2004	60
	10,470,000							30,112,861	192,537,580		2005	61
	10,477,000							40,589,861	157,794,000		2006	62
	10,475,000							51,064,861	159,858,000		2007	63
	10,475,000							61,539,861	155,841,000		2008	64
	10,471,000							72,010,861	155,769,000		2009	65
	10,467,000							82,477,861	153,112,000		2010	66
▼	10,466,000	▼	▼	▼	▼	▼	▼	92,943,861	153,108,000	▼	2011	67
0	10,466,000	0	0	292,037,000	0	105,528,000	0	103,401,861	2,899,000	105,528,000	2012	68
0	640,300,776	128,877,915	292,037,000	292,037,000	0	105,528,000	0	113,857,861	0	0	2013	69
											Total	

Column 16 - The annual operation, maintenance, and overhead costs chargeable to power ration after completion of the power system are estimated as follows:

Production Plant	
Operation	$649,000
Maintenance	553,000
Administration and General	135,000
Subtotal	$1,537,000
Transmission System	
Operation	$235,000
Maintenance	252,000
Administration and General	135,000
Subtotal	$622,000
Other	
Nimbus Fish Protection Facilities	$ 68,000
Non-operating allocated to power	83,000
Subtotal	$151,000
Total	$2,310,000

Column 18 - The adjustments applicable in F.Y. 1956 for prior years are:

Redistribution and Reclassification of non-operating Income	-$13,161
Redistribution and Reclassification of non-operating Expense	-131,610
Miscellaneous Adjustments which include items entered directly to Acct. 271.11	195,957
Total	$37,508

Column 20 - Interest is calculated at 3% per year on the unamortized interest-bearing investment at end of the previous year (Column 23). The 1949 figure includes $66,475 applicable to 1948.

Column 26 - Surplus shown as accumulating through the 50th year after the last major features (Trinity Dam, Reservoir, and Powerplant) are placed in service in F.Y. 1963.

Column 22 - Estimated cost of authorized features are as shown on the construction control schedule dated FP-2 dated August 22, 1956, and the FP-2b of the same date, and the FP-2 Trinity River Division control schedule dated August 1956.

Multipurpose (with Allocation to Power)	
Shasta Dam and Reservoir	$119,305,240
Nimbus Dam and Reservoir (Lake Natoma)	6,835,182
Trinity Dam and Reservoir	63,123,000
Lewiston Dam and Reservoir	4,541,000
Clear Creek Conduit	36,540,000
Whiskeytown Dam and Reservoir	17,424,000
Folsom Dam U.S.B.R. Construction	525,685
General Property	6,747,432
Other (Without Allocation to Power)	311,721,066

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TABLE 4

REGION 2
CENTRAL VALLEY PROJECT

Column 22 Continued

Power Features	
Keswick Dam and Reservoir	6,931,436
Shasta Powerplant and Switchyard	29,153,672
Keswick Powerplant and Switchyard	11,388,611
Folsom Powerplant and Switchyard	27,647,807
Nimbus Powerplant and Switchyard	4,171,993
Folsom-Nimbus Line, 115-kv	148,942
Folsom Transmission Facilities 230-kv	2,533,486
Spring Creek Conduit	17,841,000
Trinity Powerplant	30,101,000
Clear Creek Powerplant	11,548,000
Spring Creek Powerplant	18,165,000
Tracy Switchyard	6,671,000
Shasta-Tracy East Side Line, 230-kv	6,281,469
Shasta-Tracy West Side Lines, 230-kv	11,120,619
Tracy-Ignacio Lines and Subs. (69 kv and 2.3 kv)	739,044
Trinity Transmission Facilities	19,325,000
Preference Customer Metering Facilities	202,000
Central Valley Basic Networks	394,400
Switchboard Metering Facilities	226,801
Shasta Area Service Line	8,251
Folsom Prison Service Line	20,776
Total Construction Cost on Control Schedules	$360,557,684
Folsom Dam Corps of Engineers Construction	61,870,981
Project Investigations	892,625
	$423,330,609
Not included in Repayment Analysis (Water Distribution System)	66,065,218
Total Used in Repayment Analysis	$757,265,391

Following is the cost allocation and probable repayment of the Central Valley Project features:

Item	Cost Allocation	Probable Repayment
Nonreimbursable		
Navigation	$ 12,940,000	
Flood Control	35,684,000	
Fish and Wildlife	11,808,000	
Recreation	215,000	
Total Nonreimbursable	$ 60,467,000	
Reimbursable		
Irrigation	$ 384,605,000	$ 279,160,300
Municipal and Industrial Water	17,419,000	17,576,000 a/
Commercial Power	292,037,000	397,566,000 b/
Fish and Wildlife	2,737,000	2,496,000
Total Reimbursable	$ 696,798,000	$ 696,798,000
Grand Total	$ 757,265,000	
a/ Irrigation aid from M&I water sales		$ 157,400
b/ Irrigation aid from Power Sales		105,287,300
Fish & Wildlife aid from Power sales		240,700
Total (See Col. 24)		$ 105,528,000

Reconcilement of F.Y. 1956 Financial Data

Column 11 - Total Operating Revenues, F.Y. '56:

Operating Revenue (A/C 561)	$ 9,988,490
Non-operating Income allocated to Power (A/C 580)	187
	$ 9,988,677

Column 15 - Provision for Replacement to Date:

	(Charges)	(Accruals)
Electric Plant (A/C 251)	$136,528	$3,470,732
Multipurpose Plant (A/C 253)	69,339 a/	254,531
	$205,867	$3,725,263

a/ Charges to Multipurpose Plant Reserve Applicable to Power on an allocation Basis (Total charges to Multipurpose Reserve are $186,326)

Column 17 - Total Operating Revenue Deductions F.Y. '56:

Operating Expense (A/C 502)	$2,601,989
Provision for Replacement (A/C 503)	397,800
Property Losses (A/C 504)	4,246
	$3,003,835

Column 21 - Investment Repayment:

Net Income (A/C 271.11)		$5,699,007
Adjustments - Prior Years Expense (A/C 271.11)		(195.957)
Allocated Share Non-Operating Income and Expense (A/C 271.14):		
Current Year	$ 187	
Prior Years - Adjustment	115,162	115,349
Adjustments - Prior Years Share of Non-reimbursable Expense (A/C 217)		1,508
Total Current Year		$5,501,687
EXCESS INCOME OVER EXPENSE (A/C 271.11)		$60,930,519
Allocated Share Non-Operating Income and Expense (A/C 271.14)		19,061
Adjustment - Allocated Share Non-Reimbursable Expense (A/C 217)		1,508
Total - To Date		$60,952,868

Column 22 - Interest Bearing Plant in Service, F.Y. '56:

Electric plant in service (A/C 103)	$106,349,371
Multipurpose Plant allocated to Power (A part of A/C 101)	40,070,629
Allocated to Project Use	(23,172,000)
	$134,283,000

This figure varies from that used in F.P.C. Form No.1 dated Oct 2 1956 because of changed assumptions on the functions of the Multipurpose Plant in Service.

Prepared by A. Estes Date Dec. 11 1956

Historical financial data certified correct.

LBM

Thomas K. Casey
Regional Control and Planning Officer

Recommended:

Regional Project Development Engineer

Approved:

Regional Director

Pending determination between Federal or partnership construction of the Trinity Project power facilities this study is based for convenience on Trinity power as a Federal project. Payment would be at least as favorable with partnership construction.

The estimate of Central Valley project net generation for the 50-year period of 3,777 million kilowatt-hours indicated on page 71 of the report results from the diversion of Clear Creek water to the Shasta County service area and the reduction in releases from Trinity Reservoir in fiscal years 1964 and 1965 to accumulate water in Trinity Reservoir.

PACIFIC GAS & ELECTRIC CO.,
San Francisco, December 10, 1956.

Mr. C. H. SPENCER,
Regional Director, Region 2, Bureau of Reclamation,
Department of the Interior, Sacramento, Calif.

DEAR MR. SPENCER: In accordance with discussions held at our meeting of December 3, 1956, the following explanation and attachments regarding operations and contract payments under partnership development of the Trinity project are forwarded for your information.

Attached from our current study T–3, are water and power operation studies of the Trinity project under partnership operation for the 20-year period of record, October 1921 to September 1941, inclusive, for both initial (i. e., year 1979) and ultimate (i. e., year 2013) conditions of water requirements.

In summary, the operation studies show that company-partnership powerplants would produce the following capacities and average annual energy output under initial and ultimate conditions:

	Initial conditions	Ultimate conditions
Dependable capacity, megawatts	346.6	319.6
Nondependable capacity, megawatts	25.8	44.8
Annual energy, million kilowatt-hours	1,262.9	1,218.0

The estimated capital costs of power facilities of contemplated company features of the Trinity project (as transmitted to you by my letter of November 26, 1956) are as follows:

Trinity powerplant (98 megawatts)	$8,369,000
Lewiston powerplant (0.6 megawatts)	347,000
Clear Creek powerplant (133 megawatts)	9,920,000
Spring Creek powerplant (153 megawatts)	12,894,000
Transmission plant, including powerplant step-up, switching, and lines and facilities for transmission to the vicinity of Cottonwood	11,207,000
Transmission plant, including switching, transmission and terminal facilities for south of Cottonwood	14,200,000
Total	56,937,000

These capital costs may be broken down by function as follows:

Production	$31,530,000
Transmission	15,877,000
Switchyards and substations	9,530,000
Total	56,937,000

Based on (1) fixed charges on capital costs for return on depreciated investment, depreciation, Federal and State income taxes, property taxes, and insurance, etc., of 11.8 percent on production and switchyards and substations, and 11.6 percent on transmission, together with (2) estimates of operating costs for operation, maintenance, and

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Total	56,937,000

Based on (1) fixed charges on capital costs for return on depreciated investment, depreciation, Federal and State income taxes, property taxes, and insurance, etc., of 11.8 percent on production and switchyards and substations, and 11.6 percent on transmission, together with (2) estimates of operating costs for operation, maintenance, and

general expenses which are computed in percent of capital cost to be 0.8 percent for production, 0.7 percent for transmission, and 1.1 percent for switchyards and substations, the total annual cost, other than the payment for falling water, has been estimated to be $7,152,000.

The unit annual values (before deducting the annual costs of hydro production and transmission facilities) of the power capacities and energy output of company Trinity plants at generation, based on the cost of producing and delivering power from a modern steam plant with fuel at an equivalent cost of $2 per barrel would be $23.53 per dependable kilowatt-year, $4.30 per non-dependable kilowatt-year and 2.917 mills per kilowatt-hour. Applying these values to the previously cited capacities and energy output from the proposed company plants as shown by the operation study, the value of Trinity power based on steam costs, would be $11,950,000 under initial conditions and $11,265,000 under ultimate conditions.

Deducting the annual costs of producing, transforming, switching, and transmitting Trinity power from these annual values leaves an annual margin of value over cost available for annual payments for falling water of $4.8 million during the initial period and $4.1 million under ultimate conditions. The mean payment over the normal 50-year project repayment period would be $4,627,000 per year.

Also attached from study T–3 is a study showing the payments which would be made for falling water, by months, under partnership operation for the 20-year period of record October 1921 to September 1941, inclusive, for both initial and ultimate conditions. The rates to be paid per acre-foot for falling water of various classifications at each of the individual plants used in the study are the same as the rates set forth in the December 5, 1956, draft of agreement for purchase of use of falling water and license to develop electric power.

The results of this study of contract payments may be summarized on annual and 20-year average basis as follows:

Year	Contract payments		Year	Contract payments	
	Initial period	Ultimate conditions		Initial period	Ultimate conditions
	Thousands	*Thousands*		*Thousands*	*Thousands*
1922	$4,651	$4,045	1934	$4,494	$3,742
1923	4,638	4,035	1935	4,518	3,740
1924	4,608	3,975	1936	4,544	3,782
1925	4,769	4,113	1937	4,546	3,768
1926	4,684	4,009	1938	4,781	4,060
1927	5,410	4,528	1939	4,642	4,046
1928	4,792	4,118	1940	5,380	4,725
1929	4,654	4,035	1921 (3 months) plus 1941 (9 months)	6,314	5,706
1930	4,665	4,028			
1931	4,603	3,966			
1932	4,546	3,852	Average 20-year period	4,788	4,103
1933	4,517	3,785			

The mean contract payment over the normal 50-year project repayment period would be $4,617,000: This figure compares closely with the previously cited mean margin of value of power over cost of $4,627,000, the difference being two-tenths of 1 percent.

Very truly yours,

JOHN F. BONNER,
Assistant to the Vice President and Chief Engineer.

ENCLOSURE NO. 4. DEFINITE PLAN REPORT ON TRINITY RIVER DIVISION—ALL-FEDERAL DEVELOPMENT

(This report is not reproduced here. It is a detailed feasibility report by the Bureau of Reclamation, dated February 1957, on the plan of development for the Trinity River division assuming all-Federal development. A copy is in the committee's files.)

THE SECRETARY OF THE INTERIOR,
Washington, May 2, 1957.

Hon. CLAIR ENGLE,
House of Representatives, Washington, D. C.

DEAR MR. ENGLE: The Regional Director of the Bureau of Reclamation at Sacramento, Calif., has advised the Commissioner of Reclamation that certain data he submitted to the Commissioner and which was contained in the Commissioner's report to me dated February 11, 1957, concerning proposals for joint development of the Trinity River division, now appear to be in error. The data in question are being reevaluated.

Until reevaluation of these data has been completed, it will be appreciated if you will defer consideration of pending legislation to authorize joint development of the Trinity River division.

I shall advise you promptly of the results of our current restudy.

Sincerely yours,

FRED A. SEATON,
Secretary of the Interior.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., June 4, 1957.

Hon. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D. C.

DEAR MR. ENGLE: The reevaluation of certain data which were included in my report to the Congress in connection with proposals for the joint development of the Trinity division of the Central Valley project has now been completed.

In accordance with my letter of May 2, 1957, to you, I am enclosing copy of my additional report to the Congress. With the submission of these data I recommend that your committee give early consideration to legislation required to authorize such development of the Trinity River division.

Sincerely yours,

FRED A. SEATON,
Secretary of the Interior.

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DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington 25, D. C., June 4, 1957.

Hon. RICHARD M. NIXON,
President of the Senate,
Washington, D. C.

DEAR MR. PRESIDENT: On February 12, 1957, I transmitted to you my report on negotiations with prospective purchasers of the falling water to be produced by the Trinity River division of the Central Valley project, in conformance with the provisions of Public Law 386, 84th Congress, 1st session.

Certain data set forth on page 3 of my letter of February 12 have been found to be in error due to the use of outdated rate schedules by Sacramento employees of the Bureau of Reclamation in estimating the additional costs of power to preference customers under joint development of the Trinity division.

The Bureau of Reclamation and representatives of the Pacific Gas & Electric Co. have rechecked the rate schedules previously used and are now in agreement on the savings to preference customers under an all-Federal project (based on the Bureau's assumptions as to division of power among its customers). The savings to preference customers that could be served (from the Central Valley project without the San Luis unit) would be $115,002,000 over the 50-year payout period, instead of the $86,000,000 given in my previous report. This figure is based on preference loads totaling 650,000 kilowatts under all-Federal development and 400,000 kilowatts under joint development. It also assumes that the Sacramento Municipal Utility District would be served under a schedule R rate of the Pacific Gas & Electric Co., with a 9-percent discount for bulk sales which the Pacific Gas & Electric Co. has orally assured us would be available to the Sacramento Municipal Utility District. Of the total savings, $28,812,000 would be applicable to Federal agencies and $86,190,000 to other preference customers.

A similar computation with the San Luis unit added shows that the savings in cost to Federal agencies and other preference customers over the 50-year period would be $149,940,000 instead of $118,000,000 originally stated. Of the total amount, $91,920,000 would be the savings to Federal agencies and $58,020,000 to other preference customers. These data are based on preference loads totaling 470,000 kilowatts under all-Federal development including San Luis and 290,000 kilowatts under joint development.

This letter should be considered as a supplement to my February 12, 1957, letter and report.

Sincerely yours,

FRED A. SEATON,
Secretary of the Interior.

(Identical letter to Hon. Sam Rayburn, Speaker of the House of Representatives, Washington, D. C.)

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C., June 7, 1957.

Hon. FRED A. SEATON,
Secretary of the Interior,
Department of the Interior,
Interior Building, Washington, D. C.

MY DEAR MR. SECRETARY: This will acknowledge receipt of your letter of June 4, furnishing me a copy of your letter to the Speaker of the House supplying additional information with respect to your recommendation for joint development of the Trinity River project.

The revised figures of course have no meaning without the backup studies upon which they are based. You will recall that on March 25, 6 weeks ago, I requested such backup studies showing the basis for the $86 million and $118 million figures, including the identity of the customers assumed and the assumptions made with respect to the load of each customer over the 50-year period. To date, none of this material has been received. Now I would like to renew my request for the studies supporting the $86 million and $118 million figures, and in addition request the backup studies supporting the new figures.

I need the studies supporting both the old and new figures in order to determine how the basic assumptions have been changed. It might be helpful at the same time if you could provide an explanation of why it became necessary to revise the basic assumptions, rather than simply correct the previous error.

In view of pending legislation before this committee, you will understand that this information should be furnished at the earliest possible date.

Sincerely yours,

CLAIR ENGLE, *Chairman.*

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., June 28, 1957.

Hon. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D. C.

DEAR MR. ENGLE: The information you requested in your letter dated June 7, 1957, is now available.

The enclosed tabulations contain the supporting data for the differences in preference customer costs set forth in our previous reports to the Congress on the proposal for joint development of the Trinity River division.

Enclosures A and B contain the data of the Bureau of Reclamation in support of its estimates in the Commissioner's report to me dated February 11, 1957. Enclosures C and D contain the Bureau's data in support of its estimates reflected in my supplementary report to the Congress of June 4, 1957.

The Commissioner advises me that the differences in the computations resulted solely from the use of outdated rate schedules in the original computations and that all other assumptions were the same in the more recent computations reflected in enclosures C and D.

Sincerely yours,

FRED A. SEATON
Secretary of the Interior.

ENCLOSURE A.—*Customer cost comparison for loads totaling 250,000 kilowatts without San Luis unit*

	Megawatts	Monthly average			Kilovolts	Pacific Gas & Electric Co.		Central Valley project	
		Megawatt-hours	Load factor percent	Power factor percent		Rate	Cost	Rate	Cost
Federal agencies:									
Ames Laboratory NACA	50	7,300	20.0	99	110.0	[1]	$73,500	[2] R2F2W	[3] $68,020
AEC, Livermore	5	1,760	54.4	95	12.0	A-13	18,100	R2F2W	9,440
12th Naval District	30	8,800	50.2	95	1.5	A-13	84,700	R2F2W	49,720
Subtotal	85	17,860					176,300		127,180
Other agencies:									
City of Palo Alto	33	10,400	54.0	95	4.0	[4]	64,900	R2F2W	56,070
Sacramento Municipal Utility District	140	49,680	65.0	97	230.0	[5]	282,480	[6]	197,100
Subtotal	173	60,080					347,380		253,170
Total	[7] 258						523,680		380,350
Difference:									
Federal agencies							49,120		
Total							143,330		
Difference in 50-year (600 months):									
Federal agencies							29,472,000		
Total							85,998,000		

[1] Estimated from data on present Pacific Gas & Electric service to Ames.
[2] Standard Central Valley project rate schedule with wheeling service provided by Pacific Gas & Electric Co.
[3] Total load, 100,000 kilowatts at 40 percent load factor—Central Valley project cost per month.. $163,780
Base load, 50,000 kilowatts at 60 percent load factor—Central Valley project cost per month.... 95,760
Increment cost, Central Valley project.... 68,020
[4] Average of 6.24 mills per kilowatt-hours experienced in 1954 (from PUC report).
[5] Estimated at 9 percent less than Palo Alto average, or 5.69 mills per kilowatt-hour, in recognition of high-voltage and high-load factor conditions.
[6] Standard R2F2 rate schedule reduced by 10 percent for high-voltage delivery, contract 14-06-200-290.
[7] 250 megawatts, coincidental at load center.

ENCLOSURE B.—*Customer cost comparison for loads totaling 180,000 kilowatts with San Luis unit*

	Megawatts	Monthly average			Kilovolts	Pacific Gas & Electric Co.		Central Valley project	
		Mega-watt-hours	Load factor, percent	Power factor, percent		Rate	Cost	Rate	Cost
Federal agencies:									
Benecia Arsenal	4.5	833	29.5	99	22	(1)	$10,300	R2-F2W [2]	$6,700
Camp Beale	1.0	433	63.2	95	12	(1)	3,200	R2-F2W [2]	2,100
Castle Air Force Base	4.2	1,541	56.6	95	12	(1)	12,300	R2-F2W [2]	8,000
Mather Air Force Base	5.5	1,841	56.5	94	4	(1)	14,700	R2-F2W [2]	9,600
Moffet Field, Naval Air Station	4.0	1,358	54.0	90	11	(1)	11,200	R2-F2W [2]	7,300
Naval Supply, Stockton	6.0	1,016	32.4	92	11	(1)	11,800	R2-F2W [2]	7,700
Parks Air Force Base	4.0	1,458	66.9	93	12	(1)	10,600	R2-F2W [2]	6,900
Sharpe General Depot, Lathrop	1.0	133	26.2	99	4	(1)	1,800	R2-F2W [2]	1,200
Sharpe General Depot, Tracy	.7	92	27.6	92	4	(1)	1,200	R2-F2W [2]	800
Camp Stoneman	.1	17	16.8	85	4	(1)	300	R2-F2W [2]	200
Mare Island, Navy	30.0	9,813	58.7	97	110	(1)	66,600	R2-F2W [2]	43,400
Port Chicago, Navy	2.5	925	63.0	84	69	(1)	6,400	R2-F2W [2]	4,200
Travis, Air Force Base	6.0	2,382	65.3	88	60	(1)	15,200	R2-F2W [2]	9,900
Ames Laboratory NACA	50.0	21,900	60.0	99	110	(3)	156,400	R2-F2W [2]	95,800
Subtotal	119.5	43,742					322,000		203,800
Other agencies:									
Deuel Vocational Institute	1.7	466	59.2	93	4	(1)	3,700	R2-F2W	2,400
Folsom State Prison	2.5	750	57.4	97	2.4	(1)	6,000	R2-F2W	3,900
Provident Irrigation District	.5	117	66.7	95	2.4	(1)	900	R2-P1W	600
West Side Irrigation District	2.0	658	68.5	93	2.4	(1)	4,800	R2-P1W	3,100
Glenn-Colusa Irrigation District	3.1	925	68.2	93	60	(1)	5,800	R2-P1W	3,800
Reclamation District No. 2035	1.5	466	56.2	90	12	PA-1	3,800	R2-P1W	2,500
Plumas Sierra R. P. A.	3.4	925	57.0	92	44	R	7,800	R2-F2W	4,200
City of Roseville	15.0	6,581	46.4	95	12	R	61,200	R2-F2W	39,200
Sacramento Municipal Utility District	66.0	25,330	65.2	97	230	(4)	144,100	(5)	100,000
Subtotal	95.7	36,218					238,100		159,700
Total	[6] 215.2						560,100		363,500
Difference: Federal agencies							118,200		
Total							196,600		
Difference in 50-year (600 months) Federal agencies							70,920,000		
Total							117,960,000		

[1] Estimated at 1.53 times Central Valley project cost as being typical for load conditions.
[2] Standard Central Valley project rate schedule with wheeling service provided by Pacific Gas & Electric Co.
[3] Estimated from data on existing service.
[4] 5.69 mills per kilowatt-hour, estimated as noted on enclosure A.
[5] Standard R2-F2 rate schedule reduced by 10 percent for extra high-voltage delivery: Contract 14-06-200-299.
[6] 180 megawatts coincidental at load center.

ENCLOSURE C.—*Customer cost comparison for loads totaling 250,000 kilowatts without San Luis unit*

	Megawatts	Monthly average			Kilovolts	Pacific Gas & Electric Co.		Central Valley project	
		Megawatt-hours	Load factor, percent	Power factor, percent		Rate	Cost	Rate	Cost
Federal agencies:									
Ames Laboratory NACA	50	7,300	20.0	99	110.0	(1)	$73,500	R2–F2W [2]	[3] $68,020
Atomic Energy Commission, Livermore	5	1,760	54.4	95	12.0	A–13	16,300	R2–F2W [2]	9,440
12th Naval District	30	8,800	50.2	95	1.5	A–13	85,400	R2–F2W [2]	49,720
Subtotal	85	17,860					175,200		127,180
Other preference agencies:									
City of Palo Alto	33	10,400	54.0	95	60.0	(4)	80,060	R2–F2W [2]	48,340
Sacramento Municipal Utility District	140	49,680	65.0	97	230.0	(5)	309,030	(6)	197,100
Subtotal	173	60,080					389,090		245,440
Total	[7] 258						564,290		372,620
Differences:									
Federal agencies							48,020		
Other preference agencies							143,650		
Total							191,670		
Difference in 50-years (600 months):									
Federal agencies							28,812,000		
Other preference agencies							86,190,000		
Total							115,002,000		

[1] Estimated from data on present Pacific Gas & Electric service to Ames.
[2] Standard Central Valley project rate schedule with wheeling service provided by Pacific Gas & Electric Co.
[3] See the following:

Total load 100,000 kilowatts at 40 percent load factor—Central Valley project cost per month	$163,780
Base load 50,000 kilowatts at 60 percent load factor—Central Valley project cost per month	95,760
Increment cost, Central Valley project	68,020

[4] Schedule R, rate B. 1 percent power factor discount.
[5] Schedule R, rate B. 1.2 percent power factor discount; total less 9 percent.
[6] Standard R2–F2 rate schedule reduced by 10 percent for high-voltage delivery, contract 14–06–200–290.
[7] 250 megawatts, coincidental at load center.

ENCLOSURE D.—*Customer cost comparison for loads totaling 180,000 kilowatts with San Luis unit*

	Megawatts	Monthly average			Kilovolts	Pacific Gas & Electric Co.		Central Valley project	
		Mega-watt-hours	Load factor, percent	Power factor, percent		Rate	Cost	Rate	Cost
Federal agencies:									
Benecia Arsenal	4.5	833	29.5	99	22	A-13	$9,400	R2-F2W [1]	$6,700
Camp Beale	1.0	433	63.2	95	12	A-13	4,100	R2-F2W [1]	2,100
Castle Air Force Base	4.2	1,541	56.6	95	12	A-13	14,100	R2-F2W [1]	8,000
Mather Air Force Base	5.5	1,841	56.5	94	4	A-13	17,000	R2-F2W [1]	9,600
Moffett Field Naval Air Station	4.0	1,358	54.0	90	11	A-13	12,700	R2-F2W [1]	7,300
Naval Supply Stockton	6.0	1,016	32.4	92	11	A-13	11,200	R2-F2W [1]	7,700
Parks Air Force Base	4.0	1,458	66.9	93	12	A-13	13,400	R2-F2W [1]	6,900
Sharpe General Depot, Lathrop	1.0	133	26.2	99	4	A-13	1,900	R2-F2W [1]	1,200
Sharpe General Depot, Tracy	.7	92	27.6	92	4	A-13	1,300	R2-F2W [1]	800
Camp Stoneman	.1	17	16.8	85	4	A-13	300	R2-F2W [1]	200
Mare Island, Navy	30.0	9,813	58.7	97	110	A-13	86,100	R2-F2W [1]	43,400
Port Chicago, Navy	2.5	925	63.0	84	69	A-13	8,400	R2-F2W [1]	4,200
Travis Air Force Base	6.0	2,382	65.3	88	60	A-13	20,700	R2-F2W [1]	9,900
Ames Laboratory NACA	50.0	21,900	60.0	99	110	[2]	156,400	R2-F2W [1]	95,800
Subtotal	119.5	43,742					357,000		203,800
Other preference agencies:									
Duel Vocational Institute	1.7	466	59.2	93	4	A-13	4,600	R2-F2W	2,400
Folsom State Prison	2.5	750	57.4	97	2.4	A-13	7,100	R2-F2W	3,900
Provident Irrigation District	.5	117	66.7	95	2.4	PA-1	1,400	R2-P1W	600
West Side Irrigation District	2.0	658	68.5	93	2.4	PA-1	6,000	R2-P1W	3,100
Glenn Colusa Irrigation District	3.1	925	68.2	93	60	PA-1	8,400	R2-P1W	3,800
Reclamation District No. 2035	1.5	466	56.2	90	12	PA-1	3,800	R2-P1W	2,500
Plumas Sierra R. P. A.	3.4	925	57.0	92	44	R-B	7,800	R2-F2W	4,200
City of Roseville	15.0	6,581	46.4	95	12	R-B	57,900	R2-F2W	39,200
Sacramento Municipal Utility District	66.0	25,330	65.2	97	230	[3]	159,400	[4]	100,000
Subtotal	95.7	36,218					256,400		159,700
Total	[5] 215.2						613,400		363,500
Difference:									
Federal agencies							153,200		
Other preference agencies							96,700		
Total							249,900		

Difference in 50-year (600 months):										
Federal agencies									91, 920, 000	
Other preference agencies									58, 020, 000	
Total									149, 940, 000	

[1] Standard Central Valley project rate schedule with wheeling service provided by the Pacific Gas & Electric Co.
[2] Estimated from data on existing service.
[3] Pacific Gas & Electric rate schedule R, rate B, less 9 percent.
[4] Standard R2–F2 rate schedule reduced by 10 percent for extra high-voltage delivery contract 14–06–200–290.
[5] 180 Megawatt coincidental at load center.

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
OFFICE OF THE CHAIRMAN,
Washington, D. C., June 20, 1957.

Hon. FRED A. SEATON,
Secretary of the Interior,
Washington, D. C.

MY DEAR MR. SECRETARY: On April 19, 1957, a report was requested from the Department of the Interior on H. R. 6997, by Mr. Scudder, to provide for the joint development of the waterpower resources of the Trinity River division, Central Valley project, California, by the United States and Pacific Gas & Electric Co., to reduce expenditures of the United States, to increase revenues of the United States, to encourage the most widespread use of the power generated at the lowest possible rates to consumers consistent with sound business principles, and for other purposes.

To date, your report has not been received. I would be glad to proceed with hearings on this proposed legislation but would like to have the report of the Department. May I also renew my request for the backup studies described in my letters of March 25 and June 7?

Your cooperation in expediting action on the Department report and submission of the information requested will be greatly appreciated.

Sincerely yours,

CLAIR ENGLE, *Chairman.*

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., July 11, 1957.

Hon. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D. C.

DEAR MR. ENGLE: Reports have been requested from this Department on H. R. 6997 and H. R. 7407, both of which are bills to provide for the joint development of the water power resources of the Rrinity River division, Central Valley project, California, by the United States and Pacific Gas & Electric Co., to reduce expenditures of the United States, to increase revenues of the United States, to encourage the most widespread use of the power generated at the lowest possible rates to consumers consistent with sound business principles, and for other purposes.

We recommend that 1 or the other of these 2 bills be enacted.

Section 1 of these bills would, if enacted, direct this Department to enter into a contract with the Pacific Gas & Electric Co. for the sale of falling water made available by the Trinity River division of the Central Valley project, California, and to grant a license to that company for the construction of generation and transmission facilities in connection therewith. The possibility of such an arrangement was contemplated when the Trinity River division was authorized by the Congress (act of August 12, 1955, 69 Stat. 719). That act directed this Department "to continue to a conclusion the engineering studies and negotiations with any non-Federal agency with respect to

proposals to purchase falling water and, not later than 18 months from the date of enactment of this act, report the results of such negotiations, including the terms of a proposed agreement, if any, that may be reached, together with * * * recommendations thereon, which agreement, if any, shall not become effective until approved by Congress."

Section 1 also provides that the terms of the contract and license shall be not less favorable to the United States than those included in House Document No. 94, 85th Congress. The form of contract and license there set out provide, among their salient provisions, for (1) construction of the Trinity, Lewiston, Clear Creek, and Spring Creek powerplants (approximately 384,600 kilowatts in all) and related transmission facilities at the expense of the company; (2) the furnishing of falling water by the Government in specified minimum monthly amounts or, in lieu thereof, the furnishing of power and energy from Central Valley project powerplants; (3) payments by the company under a formula which, it is estimated, will yield net revenues totaling about $230,850,000 over the 50-year term of the contract or an average of about $4,617,000 per year; (4) permissible recapture by the United States at the end of this 50-year period upon payment of the company's undepreciated investment and severance damages; (5) extension of the present interchange agreements, which expire in 1961, to the same termination date as the falling-water contract; and (6) the firming of project energy to meet preference customer requirements up to a limit of 450,000 kilowatts.

In addition to providing in general that the contract and license shall contain terms not less favorable to the United States than those set forth in House Document No. 94, section 1 of the bill spells out several respects in which the actual documents will differ from the drafts. Thus the bill, if enacted, will require that the Government's right of recapture upon or after expiration of the license be unrestricted as to time save for the requirement that 2 years' notice be given. It will also require that the troublesome question of severance damages be handled with more particularity and clarity than it now is either in the Federal Power Act or in the form of contract by limiting the "property of the company as to which severance damages shall be payable * * * to the transmission lines and related communication facilities determined by the Secretary to be required to connect the company's electric system with the powerplants constructed by the company in order to utilize the falling water made available by the Federal facilities of the Trinity River division, to the extent that such transmission lines and related communication facilities are not included among the works to be recaptured by the United States." And it will require that the company's accounts with respect to the works it builds be kept in accordance with the Federal Power Commission's uniform system of accounts and that determination of its net investment in those works be under the jurisdiction of the Commission and include only additions and betterments approved in advance by the Secretary of the Interior.

Section 2 of the bill permits amendment from time to time of the contract and license, restricting, however, the scope of such amendments to those that will not impair operation of the Central Valley project for river regulation, improvement of navigation, flood control, and the furnishing of water for irrigation and domestic purposes and

providing, further, that any modification of the provisions for sale of falling water or of the license shall be effective only upon approval by act of Congress.

Section 3 provides that, unless the company exercises due diligence in the construction of the works covered by the license, the Secretary may declare the license forfeited and the agreements null and void and that, if he does so, he shall proceed with construction of the works as authorized by the act of August 12, 1955, as amended. Forfeiture may not, however, be declared until after notice and an opportunity to be heard, and the company will be entitled to compensation for the works it has constructed as they then exist.

Section 4 contains an amendment to section 4 of the act of August 12, 1955. The amendment would provide that the transmission and disposition of power and energy by the company shall be in accordance with the regulations of the Federal Power Commission and the Public Utilities Commission of the State of California, each acting within its own jurisdiction.

Section 5 deals with tax matters. The first sentence negatives any possibility that the existence of a license from this Department or the occupancy of Federal lands may impair the right of the State of California to tax the company upon the works constructed under the act. The second sentence provides for a reduction in the amount of inlieu payments to be made by the Government to Trinity County under the act of August 12, 1955, this reduction being based on that portion of the value of the property which the Secretary finds properly allocable to hydroelectric power.

Section 6 requires a biennial report to the Congress of operations under the act. Section 7 provides that the act shall be an amendment and supplement to the act of August 12, 1955, as already amended, and gives it a short title.

Our reasons for recommending enactment of such legislation are spelled out in our letter to the Speaker of the House dated February 12, 1957 (reprinted in H. Doc. No. 94), as supplemented by our letter of June 4. Briefly. the reasons are these: Construction of the Trinity power facilities by a non-Federal agency will reduce the Government's capital investment in the Trinity division by $55,500,000 at a time when it is important to lessen demands on the Federal Treasury. By the end of the year 2013, moreover, such construction will have increased Central Valley project revenues, we estimate, by $124 million or $165 million, depending on whether the San Luis unit of the project is or is not constructed by the Federal Government. This will enhance the availability of project revenues to assist irrigation. At the end of the 50-year period, the Federal Government will be in a position to recapture the powerplants upon payment of the undepreciated investment and severance damages, both of which items, we believe, will be relatively minor. Finally, the power facilities will have yielded Federal, State, and local governments about $131 million in taxes over the 50-year period. These factors, in our judgment, outweigh the loss of energy which, under Federal construction, could be made available to customers entitled to preference under the Federal reclamation laws and the increased cost to them of equivalent energy bought from the company. According to estimates of the Bureau of Reclamation, power available for preference customers would be about 650,000 kilowatts with Federal construction and

400,000 kilowatts with company construction if the San Luis unit is not authorized or 470,000 kilowatts with Federal construction and 290,000 kilowatts with company construction if the San Luis unit is authorized. If company construction is approved, the added payments by preference customers, including Federal installations, over a 50-year period would be about $115 million without San Luis and about $150 million with San Luis under the assumptions of the Bureau of Reclamation.

The Bureau of the Budget has advised that there would be no objection to the submission of this report to your committee.

Sincerely yours,

FRED A. SEATON,
Secretary of the Interior.

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
OFFICE OF THE CHAIRMAN,
Washington, D. C., July 16, 1957.

Hon. FRED A. SEATON,
Secretary, Department of the Interior,
Washington, D. C.

DEAR MR. SECRETARY: I was pleased to receive your letter of June 28 furnishing certain backup material for the conclusions set forth in your June 4 letter relating to excess costs to Federal agencies and other preference customers which would result from construction of the Trinity power facilities by the Pacific Gas & Electric Co. The data furnished raise several questions on which I would like to have additional information.

First, it is noted that the data furnished for the situation involving joint development with San Luis authorized and constructed are based on preference loads totaling 290,000 kilowatts. Please furnish the committee detailed data showing how the preference load of 290,000 kilowatts can be served under joint development with San Luis added, including the amount of energy which would have to be purchased and the cost to the Federal Government for the purchase of such energy.

In connection with the potential purchase of power by the Sacramento Municipal Utility District from the Pacific Gas & Electric Co., you have assumed service under a schedule R rate of the Pacific Gas & Electric Co. with a 9-percent discount. Please furnish the backup material which is the basis for this assumption, including correspondence with the Pacific Gas & Electric Co. or with the California Public Utilities Commission, memorandums covering meetings with company or Commission representatives, or any other information which might support the application of the R schedule in this instance.

It is noted that a rate schedule designated "R2F2W" is referred to in connection with Central Valley project power service. I am not aware of existence of such a schedule and I am wondering how it differs from the "R2F2" schedule. If such a schedule exists, please furnish a copy. Also, in order to permit a check of the calculations in the tables, please furnish copies of the Pacific Gas & Electric schedules referred to in the tabulations, including the outdated schedules

originally used as well as those used in the latest studies. In addition, it would be helpful if you could provide the detailed computations showing the application of the rate schedules to each customer assumed to be served.

The information furnished does not indicate the date on which delivery to each customer was assumed, the initial power demand of each customer, or the date on which maximum demand indicated would be reached. Also, the committee should know the number of months or years after the date of initial service that it would take each customer to reach the contract rate of delivery in each month.

It is not clear from the data furnished how the billing demand ratchet feature of Pacific Gas & Electric's A–13 and R schedules has been accounted for. Please show in detail how this "ratchet" has been applied.

In order that the committee staff may have the information necessary to adequately check the availability of water and power from the Central Valley project, including Trinity, please provide the basic long-term operation study showing the availability of water for irrigation, power, municipal water supply and other purposes, together with a full statement of all criteria and columnar explanations used in making that study. The operation study furnished earlier designated as "75–G" covers only the dry cycle. In connection with this basic study, please furnish also copies of all computations showing the total power output in kilowatts and kilowatt-hours for the Central Valley project, including Shasta, Folsom, and Trinity, for the entire period covered by the basic operation study, showing all criteria used, assumptions as to project load, losses, turbine deficiencies, and other information necessary to full and complete determination of the amount of power available for commercial customers and water available for irrigation and other purposes.

In addition to the above, please furnish a copy of the Pacific Gas & Electric Co.'s February 29, 1956, letter referred to in Commissioner Dexheimer's February 11, 1957, report to you. This is the letter in which Commissioner Dexheimer states that the Pacific Gas & Electric Co. has expressed a willingness to continue the integrated operation of its system with that of the Central Valley project if Trinity power is developed by the Federal Government.

Sincerely yours,

CLAIR ENGLE, *Chairman.*

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., July 30, 1957.

Hon. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D. C.

DEAR MR. ENGLE: In response to your July 16 letter, there is enclosed a copy of the Pacific Gas & Electric Co.'s letter dated February 29, 1956, to Mr. C. H. Spencer. The balance of the data which you requested will be forwarded as soon as it can be assembled.

Sincerely yours,

FRED G. AANDAHL,
Secretary of the Interior.

PACIFIC GAS & ELECTRIC CO.,
San Francisco, Calif., February 29, 1956.

Mr. C. H. SPENCER,
Regional Director, Bureau of Reclamation,
United States Department of the Interior,
Sacramento, Calif.

DEAR MR. SPENCER: At the meeting last month with you and Mr. Dexheimer we discussed your letter of December 16, 1955, in which you asked for a statement as to the extent to which this company would agree to the integration of its electric system with that of the Central Valley project if Trinity power were developed by the Federal Government.

Since the Central Valley project was started it has been the policy of this company to integrate the operation of its electric system with that of the project. As you know, the agreements we entered into with the Bureau in 1951 provide for the coordinated operation of the two power systems in order best to meet the combined load requirements of the area.

Subject to the negotiation of mutually satisfactory contractual arrangements, we would be willing to continue the integrated operation of our system with that of the Central Valley project if Trinity power were developed by the Federal Government. We believe, however, that your studies will show that it will be to the advantage of taxpayers and water users if the Trinity powerplants are constructed by the company under the partnership proposal we previously submitted to you.

As part of our Trinity partnership proposal, we offered to supply power on an exchange basis for the San Luis and the Central Valley project pumps. We are willing to furnish this service whether the Trinity plants are built by the Government or this company. Details of these arrangements were supplied by Mr. Bonner to Mr. Murray of your office on January 28, 1956.

You may be assured that we will continue to cooperate with the Central Valley project in order to provide maximum financial assistance to taxpayers and water users and maximum net revenue to the Federal Treasury.

Very truly yours,

ROBERT H. GERDES.

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C., August 7, 1957.

Hon. FRED A. SEATON,
Secretary of the Interior, Department of the Interior,
Washington, D. C.

DEAR MR. SECRETARY: This will acknowledge Secretary Aandahl's letter of July 30 furnishing the committee a copy of the February 29, 1956, letter from the Pacific Gas & Electric Co., in which the company expressed willingness to continue the integrated operation of its system with that of the Central Valley project in the event Trinity power is developed by the Federal Government. It is noted that such willingness to integrate would be subject to the negotiation of mutually satisfactory contractual arrangements.

It is my understanding that this letter is the basis for the Bureau's redesign of the Trinity power facilities increasing the installed capacity to 369,000 kilowatts. I am very much concerned that the project designs and proposed project power operations are based upon so nebulous a document as this letter. Unless agreement with the company with respect to integrated operation under all-Federal development of the Trinity power facilities can be firmed up in more detail, I am afraid that the Federal Government would be in a poor bargaining position in the negotiation of final contractual arrangements.

Since hearings on the legislation to authorize Pacific Gas & Electric's partnership proposal will not be held until next session, the committee and the Department will have additional time within which to study this entire problem. I believe that in the end such additional study will expedite final action by the committee. This interim period would provide the Department ample time to discuss in detail with the Pacific Gas & Electric Co. the precise basis upon which the company would be willing to integrate or firm up Trinity power, should it be developed by the Federal Government.

The committee now has before it not only the proposed contract for sale of falling water but proposed extensions of the sale and interchange and wheeling contracts. These three contracts would establish the relationships between Interior and Pacific Gas & Electric with respect to the entire Central Valley project operation if Trinity power is developed by the company, determining, among other things, the amount of Federal power available for sale to Federal and preference agencies. In order for the committee to properly evaluate Pacific Gas & Electric's partnership proposal, it should be in a position to compare this proposed relationship with that which would be suggested by you and the company in the event Trinity power were developed by the Federal Government.

Consequently, I should like to request that you work out with the Pacific Gas & Electric similar drafts of agreement which would be executed if Trinity power were developed by the Federal Government as a part of the Central Valley project. Presumably this would include a continuation of the wheeling arrangement and a new contract fully integrating and firming not only Shasta and Folsom but also Trinity power. The drafts of contract should be made available to the Congress well in advance of the next session so that they may be fully considered prior to the hearing.

Thanking you for your cooperation in this matter, I am

Sincerely yours,

CLAIR ENGLE, *Chairman.*

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
OFFICE OF THE CHAIRMAN,
Washington, D. C., October 15, 1957.

Hon. FRED A. SEATON,
Secretary of the Interior,
Department of the Interior, Washington, D. C.

DEAR MR. SECRETARY: As you know, hearings before this committee on the proposal to sell the falling water from the Bureau of

Reclamation's Trinity project to the Pacific Gas & Electric Co. are planned for early in the next session of Congress. I am sure you agree that it will be better for all concerned to complete the required studies and resolve as many of the questions as we can prior to the hearings so that there is no delay in initiating construction of the power facilities. On July 16 and August 7 I directed certain inquiries to you asking for certain information and suggesting actions by the Department which would help the committee in evaluating the proposal. With the exception of a copy of one particular letter requested, neither the information nor an indication of the Department's actions has been received. Since ample time must be allowed for staff and committee consideration of the material requested, I hope that it will be furnished soon.

May I suggest that you furnish immediately the information that is now available. For example, it would seem that information on those questions directed to the excess cost study would be readily available. Also, I am sure you can inform me now whether you have proceeded or intend to proceed with negotiations with Pacific Gas & Electric on a draft of contract to provide for firming of Shasta, Folsom, and Trinity power in the event Trinity falling water is not sold to Pacific Gas & Electric. I regard the negotiation of such a contract as vital to a determination by the Congress whether the proposed sale of falling water to Pacific Gas & Electric is in the interest of the Federal Government.

May I have a reply from you within the next several days?

Sincerely yours,

CLAIR ENGLE, *Chairman.*

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., November 8, 1957.

HON. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D. C.

DEAR MR. ENGLE: Your letter of October 15 refers to certain inquiries made of the Department of the Interior on July 16 and August 7, in which you requested certain information and certain actions which would help the committee in evaluating the proposal to sell falling water from the Trinity division of the Central Valley project to the Pacific Gas & Electric Co.

The material requested in the July 16 letter is being assembled and will be forwarded under separate cover and should reach you within a week.

With regard to the action you suggested in your August 7 letter that the Department take, we enclose for your information a copy of a reply dated October 23, 1957, from the Pacific Gas & Electric Co., to our inquiry regarding negotiations toward power contracts for Trinity River development if it should be built as an all-Federal project and our response. A copy of our inquiry of September 3 is also enclosed.

Sincerely yours,

FRED A. SEATON,
Secretary of the Interior.

98574—57——5

PACIFIC GAS & ELECTRIC CO.,
San Francisco, Calif., October 23, 1957.

Mr. O. HATFIELD CHILSON,
Acting Secretary of the Interior,
United States Department of the Interior,
Washington, D. C.

DEAR MR. CHILSON: This is in reply to your letter of September 3, 1957, which arrived while I was away on vacation.

We have carefully reviewed the problems involved in negotiating a new 50-year power sale and interchange contract and a new 50-year transmission and exchange contract to include federally constructed Trinity power facilities. Completion of these long-term contracts would require protracted studies and negotiations. Based on our past experience with the existing contracts, we are convinced that the studies and negotiations could not be concluded before it will be necessary for the Congress to act on our Trinity proposal. We do not believe it would serve any useful purpose to commence such studies and negotiations at this time.

We suggest, however, that we extend the terms of the existing power interchange and wheeling contracts for a reasonable period. We should be able to negotiate these simple extensions in a relatively short period of time. Such extensions would assure continuance of our present support and wheeling service for power from existing project plants for the benefit of Bureau customers and also would provide ample time to negotiate terms covering the Trinity plants if Congress decides that they should be federally constructed. We shall be pleased to meet with your representatives to discuss this subject at an early date.

Very truly yours,

ROBERT H. GERDES.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., September 3, 1957.

Mr. ROBERT H. GERDES,
Executive Vice President,
Pacific Gas & Electric Co., San Francisco, Calif.

DEAR MR. GERDES: I am enclosing a copy of a letter dated August 7, 1957, from Congressman Clair Engle, addressed to the Secretary.

As you will note the Congressman requests that this Department undertake immediate negotiations with your company, looking toward extensions of the sale and interchange contract and the wheeling contract with your company in the event that electric power facilities of the Trinity Division are constructed by the Federal Government. We would have no objection to such negotiations and we are prepared to instruct the Bureau of Reclamation, through the regional director at Sacramento, to enter into such negotiations at once.

Will you please advise whether such a procedure is satisfactory to you.

Sincerely yours,

HATFIELD CHILSON,
Acting Secretary of the Interior.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., November 8, 1957.

Mr. ROBERT H. GERDES,
Executive Vice President, Pacific Gas & Electric Co.,
San Francisco, Calif.

DEAR MR. GERDES: The Bureau of Reclamation is being requested to explore the possibilities of opening negotiations with the Pacific Gas & Electric Co. regarding extensions of the existing power interchange and wheeling contracts for the Central Valley project as suggested in the last paragraph of your letter of October 23.

Sincerely yours,

FRED A. SEATON,
Secretary of the Interior.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., November 6, 1957.

Hon. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D. C.

DEAR MR. ENGLE: Further reference is made to your letter of July 16, 1957, requesting additional supporting data underlying this Department's reports on the proposal of the Pacific Gas & Electric Co. to construct the power facilities of the Trinity River division, Central Valley project. We have already transmitted to you a copy of the Pacific Gas & Electric Co.'s letter of February 29, 1956, which was the last item listed in your letter. The purpose of this letter is to transmit the remaining items which you requested and, in those cases where the data are not entirely clear, to provide some explanation which may aid you and the committee staff in understanding them thoroughly.

For easy reference the items, other than the February 29, 1956, letter which you requested, are set forth below in the language used in your letter.

(1) * * * detailed data showing how the preference load of 290,000 kilowatts can be served under joint development with San Luis added, including the amount of energy which would have to be purchased and the cost to the Federal Government for the purchase of such energy.

(2) 1. Correspondence with—

(*a*) The Pacific Gas & Electric Co.

(*b*) The California Public Utilities Commission.

2. Memorandums covering meetings with company or Commission representatives.

3. Any other information which might support the application of the R schedule in the instance.

(3) * * * If such a schedule (R2–F2W) exists, please furnish a copy.

(4) * * * please furnish copies of—

1. Pacific Gas & Electric schedules referred to in the tabulations including the outdated schedules originally used as well as those used in the latest studies. In addition, it would be helpful if you could provide:

2. The detailed computations showing the applications of the rate schedules to each customer assumed to be served.

(5) The information furnished does not indicate the date on which delivery to each customer was assumed, the initial power demand of each customer, or the date on which initial power demand indicated would be reached. Also the committee should know the number of months or years after the date of initial

service that it would take each customer to reach the contract rate of delivery in each month.

(6) * * * Please show in detail how this "ratchet" (billing demand feature of Pacific Gas & Electric's A–13 and R schedules) has been applied.

(7) * * * please provide the basic long-term operation study showing the availability of water for irrigation, power, municipal water supply, and other purposes together with a full statement of all criteria and columnar explanation used in making that study. In connection with this basic study, please furnish also:

1. Copies of all computations showing the total power output in kilowatt-hours for the Central Valley project including Shasta, Folsom, and Trinity for the entire period covered by the basic operation study showing:

2. All criteria used, assumptions as to project load, losses, turbine efficiencies, and other information necessary to full and complete determination of the amount of power available for commercial customers and water available for irrigation and other purposes.

Data regarding the above seven items as developed by the Bureau of Reclamation are enclosed. Where appropriate, each item is numbered in accordance with the above list. In the explanatory material which follows in the ensuing paragraphs (also provided by the Bureau of Reclamation), the various exhibits are identified by the same numbers and subnumbers.

EXPLANATORY MATERIAL

1. Estimates for the amounts and cost of purchased energy necessary to support a preference load of 290,000 kilowatts (preference load that would be served under joint development with San Luis added) are tabulated in exhibits 1–1 and 1–2. They are based on a general review of the 20-year operation study designated operation 75–F, which is being sent you as exhibit 1–4, and an operation 75–G, which was previously sent you. These studies apply directly to conditions without the San Luis unit, but the hydrogeneration would not be appreciably changed by the addition of that unit. Although these analyses are approximate, the present status of plans for integration of the San Luis unit with the State of California's Feather River project makes such approximations satisfactory for the purposes at hand.

In our studies, dependable capacity for full project development in year 2013 was estimated from operation study 75–G modified to include the power requirement for San Luis pumping. Dependable capacities for earlier years, as shown on exhibit 1–1, were estimated by judgment based on available water and on requirements for project pumping power. It was estimated that the average deficiency of 40 megawatts between dependable capacity and preference-agency load would be met by purchasing an average of 15 megawatts, and by using an average 25 megawatts of nondependable capacity in normal and better water years. Estimated cost to the Government of these purchases is shown on exhibit 1–3.

2. Use of the assumed special Pacific Gas & Electric rate (schedule R less 9 percent) for Sacramento Municipal Utility is based on the conference and correspondence with the company recorded in exhibits 2–1 and 2–2. We have had no correspondence or conferences with the California Public Utility Commission on the subject.

3. The designations R2–F2W and R2–P1W shown in the rate-comparison tabulations denote region 2's standard R2–F2 and R2–P1 rate schedules with adjustments for service through a "wheeling"

agent. These adjustments add equipment-rental charges and provide changes depending upon the voltage, which are equivalent to the following:

Service	Monthly rental per kilowatt peak	Discount
		Percent
44 kilovolts or greater	(1)	5.0
22 to 44 kilovolts for 20 megawatts or more	$0.10	1.2
22 to 44 kilovolts for less than 20 megawatts	.22	1.2
2 to 22 kilovolts	.22	1.2

[1] That portion of Central Valley project's wheeling expense that, by application of the $0.25 per kilowatts minimum provision, exceeds 1 mill per kilowatt-hour.

4. Copies of all the standard rate schedules used in the rate-comparison studies are being sent you as exhibit 4–1. A copy of the special-rate contract (14–06–200–290 with amendment No. 1) between the United States and Sacramento Municipal Utility District is included as exhibit 4–2. The draft of contract between the United States and Pacific Gas & Electric Co. for services to Ames Laboratory that was used in the computations is marked "exhibit 4–3." The obsolete rate schedule to which you referred is whatever schedule applied to the city of Palo Alto's power purchases in 1954. According to Pacific Gas & Electric's report to the California Public Utility Commission for the year ending December 31, 1954, Palo Alto paid the company an average of 6.24 mills per kilowatt-hour during that year. The Bureau of Reclamation's rate-comparison study used this average as indicative of power costs to Palo Alto during the 50-year period of analysis. The "R" rate schedule used in the revised study becomes effective late in 1958. Details of the computations supporting the rate comparisons are shown by exhibit 4–4.

5. The rate-comparison tabulations show estimates for average monthly conditions during a period of 50 years following initial rated-capacity generation at the Trinity River powerplants in about 1965. No attempt was made to develop the estimates in sufficient detail to predict conditions in each month for each customer. However, composite annual build-ups were estimated as shown on exhibits 7–3 and 7–5.

6. The ratchet features of Pacific Gas & Electric's schedules A–13 and R were not applied in preparing the rate-comparison studies because, as stated above, month-by-month load estimates were not made for each customer.

7. Central Valley project power outputs were estimated for four possible conditions:

(*a*) With Trinity River division, all-Federal development without San Luis unit;

(*b*) With Trinity River division, joint development, without San Luis unit;

(*c*) With Trinity River division, all-Federal development, with San Luis unit;

(*d*) With Trinity River division, joint development, with San Luis unit.

All of these estimates were made with the same assumptions of water supply and operating criteria. The amounts of water provided for irrigation, municipal, and industrial use, navigation, salinity control, and fish and wildlife are the same under Federal construction and joint construction of the Trinity River division. Flood control provisions are the same for all of the operations.

Dependable power capacities are estimated on the basis of operating criteria and monthly load factors, arrived at by negotiation with Pacific Gas & Electric Co., which will allow use of Central Valley project power in the company's load. Included in these criteria is the assumption of a dry cycle similar to the historical period of 1930 through 1933. Operation study 75–G, which was previously sent you, was run with dry-cycle water conditions to determine dependable capacity of the project including an all-Federal Trinity River division. Average generation and nondependable capacity were estimated by correlating the short term operation 75–G with the 20-year operation 75–F, exhibit 1–4, as shown in exhibit 7–1. Operation 75–F could not be used without such correlation since sizes of powerplants and tunnels used in this study were considerably smaller than presently proposed.

With joint development of Trinity the same operation studies as for all-Federal construction were used as a base. Since the existing Central Valley project units are expected to carry all project power requirements under joint development, the power values of Shasta and Folsom units were adjusted to reflect the estimated effect of increasing pumping power for Trinity River water. Average annual energy generation for Shasta, Keswick, Folsom, and Nimbus plants would be the same under either all-Federal or joint construction of Trinity.

The addition of the San Luis unit would decrease the amount of capacity and energy available for commercial sale because of the requirement of a large part of project power for pumping San Luis water. Starting with the same operations 75–G and 75–F, dependable capacity and energy available for commercial sale were arrived at by modifying power accomplishments of those studies on a judgment basis to include the San Luis pumping. Under all-Federal development of Trinity, these modifications were applied to the output of all plants; under joint development, the modifications were applied to the existing Central Valley project plants as adjusted for the increased project pumping resulting from the increased water supply made available by the Trinity development.

Estimates of energy generation and available power capacities for commercial loads without the San Luis unit are shown on exhibits 7–2 to 7–6, inclusive. Estimated generation and capacity for the project with the San Luis unit added are shown on exhibits 1–1 and 1–2. The amount of preference agency load that can be carried is not directly linked to dependable capacity but is rather limited by total energy available for commercial sale and to the economic limit of purchased support power. A summary of dependable capacities and corresponding preference agency loads for conditions of full development is given below:

Central Valley project power capacities under full development

	Average year dependable capacity	Preference agency load
	Megawatts	*Megawatts*
Central Valley project with Trinity (all Federal)	720	650
Central Valley project with Trinity (joint)	400	400
Central Valley project with Trinity (All Federal) with San Luis	600	470
Central Valley project with Trinity (joint) with San Luis	250	290

Exhibits 7–7 to 7–10, inclusive, show characteristics of Trinity and Spring Creek powerplants as used in operation 75–G. Clear Creek powerplant, which will operate with a very small variation in head, was assumed to have an average output efficiency of 500 kilowatt-hours per acre-foot. A copy of operation study No. 65–0, which is referred to on several of the exhibits, is being sent you as exhibit 7–11.

Transmission losses to Tracy were assumed as follows:

	Transmission loss, percent	
	Energy	Capacity
Shasta and Keswick	6	9
Folsom and Nimbus	3	4
Trinity River division	7½	10

Operation Studies 75–F and 65–O are not readily reproducible and we would appreciate having these returned at the committee's convenience so they may be returned to the Bureau of Reclamation's files.

Sincerely yours,

ROGER ERNST,
Assistant Secretary of the Interior.

(Exhibit 1–4, which is Operation Study 75–F, is not reproduced herein. This operation study is in the committee's files. Exhibits 4–1, 4–2, and 4–3 are likewise not reproduced herein. Exhibit 4–1 includes standard rate schedules used in the rate-comparison studies. Exhibit 4–2 is a copy of the existing contract between the United States and the Sacramento Municipal Utility District. Exhibit 4–3 is a copy of the contract between the United States and the Pacific Gas & Electric Co. for service to Ames Laboratory. Exhibits 7–7 through 7–11 are not reproduced here but are in the committee's files. Exhibits 7–7 to 7–10 show the characteristics of Trinity and Spring Creek powerplants as used in Operation Study 75–G. Exhibit 7–11 is Operation Study No. 65–O, which is a study to determine the combined project dependable capacity of Shasta, Keswick, Folsom, and Nimbus powerplants.)

EXHIBIT 1–1

Central Valley project, including Trinity River Division and the San Luis unit partnership proposal estimated annual system capacity disposition

[Megawatts]

Fiscal year	Estimated system dependable capacity	Purchase capacity	Simultaneous demand of preference agency load	Firm capacity available to Pacific Gas & Electric Co.	Estimated nondependable capacity
1966	320	15	360	0	25
1967	310	15	350	0	25
1968	300	15	340	0	25
1969	295	15	335	0	25
1970	290	15	330	0	25
1971	285	15	325	0	25
1972	280	15	320	0	25
1973	275	15	315	0	25
1974	270	15	310	0	25
1975	265	15	305	0	25
1976	260	15	300	0	25
1977	255	15	295	0	25
1958	250	15	290	0	25
2013	[1] 250	[2] 15	[3] 290	0	25

[1] Estimated from Operation Study 75–G for the period 1930–33 with project power requirements increased by San Luis pumping.
[2] Estimated average purchased support. Nondependable capacity useable for support of firm load would vary from 0 to 40 megawatts with an estimated average of 25 megawatts.
[3] Limited by existing long-term contract with Sacramento Municipal Utility District.

EXHIBIT 1–2

Central Valley project including Trinity River division and the San Luis unit partnership proposal estimated buildup of energy supply and disposition

[Million kilowatt-hours]

Fiscal year	Source			Disposition				
	Net hydro	Purchases	Total	Interdepartmental	Firm to preference agencies	Sales to Pacific Gas & Electric Co.	Total sales	System losses
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1966	2,670	390	3,060	665	1,825	400	2,890	170
1967	2,670	396	3,066	735	1,775	385	2,895	171
1968	2,670	399	3,069	799	1,725	373	2,897	172
1969	2,670	403	3,073	861	1,700	339	2,900	173
1970	2,670	407	3,077	926	1,675	302	2,903	174
1971	2,670	407	3,077	989	1,650	263	2,902	175
1972	2,670	407	3,077	1,051	1,625	224	2,900	177
1973	2,670	407	3,077	1,113	1,600	186	2,899	178
1974	2,670	419	3,089	1,179	1,575	156	2,910	179
1975	2,670	419	3,089	1,181	1,550	179	2,910	179
1976	2,670	419	3,089	1,182	1,525	203	2,910	179
1977	2,670	419	3,089	1,182	1,500	228	2,910	179
1978	2,670	394	3,064	1,182	1,475	228	2,885	179
1979	2,670	394	3,064	1,182	1,475	228	2,885	179
1980	2,670	394	3,064	1,183	1,475	227	2,885	179
1981	2,670	394	3,064	1,183	1,475	227	2,885	179
1982	2,670	394	3,064	1,183	1,475	227	2,885	179
1983	2,670	394	3,064	1,183	1,475	227	2,885	179
1984	2,670	394	3,064	1,184	1,475	226	2,885	179
1985	2,670	394	3,064	1,184	1,475	226	2,885	179
1986	2,670	394	3,064	1,184	1,475	226	2,885	179
1987	2,670	394	3,064	1,184	1,475	226	2,885	179
1988	2,670	394	3,064	1,185	1,475	225	2,885	179
1989	2,670	394	3,064	1,185	1,475	225	2,885	179
1990	2,670	394	3,064	1,185	1,475	225	2,885	179
1991	2,670	394	3,064	1,186	1,475	224	2,885	179
1992	2,670	394	3,064	1,186	1,475	224	2,885	179
1993	2,670	394	3,064	1,186	1,475	224	2,885	179
1994	2,670	394	3,064	1,186	1,475	224	2,885	179
1995	2,670	394	3,064	1,187	1,475	223	2,885	179
1996	2,670	394	3,064	1,187	1,475	223	2,885	179
1997	2,670	394	3,064	1,187	1,475	223	2,885	179
1998	2,670	394	3,064	1,118	1,475	222	2,885	179
1999	2,670	394	3,064	1,188	1,475	222	2,885	179
2000	2,670	394	3,064	1,188	1,475	222	2,885	179
2013	2,670	394	3,064	1,188	1,475	222	2,885	179

NOTES

Col. 2. Net generation is gross generation less plant use.
Col. 3. All energy purchased from other power systems for which payment is made.
Col. 5. Interdepartmental: Project use of power and energy for which income from power sales is credited to power repayment.
Col. 6. Firm preference agency: Total energy delivered to preference agencies limited to 290 megawatts coincidental peak in 1978.
Col. 9. System losses: Transmission losses between generators and Tracy plus losses from Tracy to loads.

EXHIBIT 1-3

Central Valley project including Trinity River division and the San Luis unit partnership proposal

[Support purchases for preference agency load of 290 megawatts]

Fiscal year	Purchased capacity		Purchased energy		Total, thousands
	Megawatts	Thousands	Kilomegawatt-hours	Thousands	
1966	[1] 15	[2] $337.5	[3] 390	[4] $1,170.0	$1,507.5
1967	15	[2] 337.5	396	1,188.0	1,525.5
1968	15	[2] 337.5	399	1,197.0	1,534.5
1969	15	[2] 337.5	403	1,209.0	1,546.5
1970	15	[2] 337.5	407	1,221.0	1,558.5
1971	15	[2] 337.5	407	1,221.0	1,558.5
1972	15	[2] 337.5	407	1,221.0	1,558.5
1973	15	[2] 337.5	407	1,221.0	1,558.5
1974	15	[2] 337.5	419	1,257.0	1,594.5
1975	15	[2] 337.5	419	1,257.0	1,594.5
1976	15	[2] 337.5	419	1,257.0	1,594.5
1977	15	[2] 337.5	419	1,257.0	1,594.5
1978	15	337.5	394	1,182.0	1,519.5
2013	15	337.5	394	1,182.0	1,519.5

[1] Estimated average purchased support capacity.
[2] Cost of $22.50 per kilowatt-year from contract 175r-3428.
[3] Estimated average amount of energy which would be purchased from Pacific Gas & Electric Co. to support preference agency load.
[4] Cost of 3 mills per kilowatt-hour is estimated average cost over repayment period.

EXHIBIT 2-1

MAY 7, 1954.

Mr. ROBERT H. GERDES,
The Pacific Gas & Electric Co.,
San Francisco, Calif.

DEAR MR. GERDES: This will confirm my understanding of the information left with me today by your Mr. Roberts. I understand that if your company were to sell bulk power, except steam-support power, to Sacramento Municipal Utility District in excess of the 290,000 kilowatts which the United States is now obligated to furnish the district, you would do so under rate schedules differing from those in the existing contract between your company and the utility district. I understand that you consider your regular R schedule (as effective August 31, 1954) to be applicable to single-point delivery of bulk power to the district. Furthermore, a discount in billing under that R schedule of 9 percent would be allowed because of deliveries in excess of 60,000 kilowatts to 230,000 volts.

I assume sale of power to the district at this rate would have no influence on your continuing your present contract with the utility district.

I will appreciate your promptly informing me if there is any error in my understanding as expressed above.

Sincerely yours,

C. H. SPENCER,
Regional Director.

EXHIBIT 2–2

PACIFIC GAS & ELECTRIC CO.,
San Francisco, Calif., May 9, 1957.

Mr. C. H. SPENCER,
Regional Director, Region II, Bureau of Reclamation,
United States Department of the Interior, Sacramento, Calif.

DEAR MR. SPENCER: This in reply to your letter of May 7, in which you asked me if there is any error in your understanding with respect to possible supply of power by the company to the Sacramento Municipal Utility District.

On the assumptions made in your letter, I believe there is no error in your understanding as expressed in your letter.

Very truly yours,

ROBERT H. GERDES.

EXHIBIT 4–4

Computation of average monthly costs to customers under Bureau of Reclamation rate schedules

Customer	Monthly average		Demand charge	Energy charge			Subtotal	Rental charge	Voltage discount	Net bill	Rate schedule
	Kilowatts	Kilowatt-hours		1st block	2d block	Balance					
With San Luis unit											
Federal agencies:											
Benicia Arsenal	3,870	833,000	$2,903	$2,012	$990		$5,905	$851	$71	$6,685	RS–F2W.
Camp Beale	940	433,000	705	488	366	$378	1,937	207	23	2,121	R2–F2W.
Castle Air Force Base	3,730	1,541,000	2,795	1,936	1,455	1,143	7,329	821	88	8,062	R2–F2W.
Mather Air Force Base	4,460	1,841,000	3,345	2,319	1,739	1,363	8,766	981	105	9,642	R2–F2W.
Moffett Field	3,440	1,358,000	2,580	1,788	1,342	928	6,638	757	80	7,315	R2–F2W.
Naval supply	4,295	1,016,000	3,221	2,233	1,373		6,827	945	82	7,690	R2–F2W.
Parks Air Force Base	2,985	1,458,000	2,240	1,555	1,165	1,360	6,320	658	82	6,896	R2–F2W.
Sharpe Lathrop	695	133,000	521	362	127		1,010	153	12	1,151	R2–F2W.
Sharpe Tracy	457	92,000	343	238	98		679	100	8	771	R2–F2W.
Camp Stoneman	139	17,000	104	68			172	31	2	201	R2–F2W.
Mare Island	22,900	9,813,000	17,175	11,908	8,931	7,718	45,732		2,287	43,445	R2–F2W.
Port Chicago	2,010	925,000	1,508	1,045	784	805	4,142			4,142	R2–F2.
Travis Air Force Base	5,000	2,382,000	3,750	2,600	1,950	2,160	10,460		523	9,937	R2–F2W.
Ames Laboratory, NACA	50,000	21,900,000	37,500	26,000	19,500	17,800	100,800		5,040	95,760	R2–F2W.
Other preference agencies:											
Deuel Vocational Institution	1,080	466,000	809	561	421	370	2,161	237	26	2,372	R2–F2W.
Folsom Prison	1,790	750,000	1,342	930	697	570	3,539	394	42	3,891	R2–F2W.
Provident Irrigation District	240	117,000	180	125	94	109	508	53	6	555	R2–P1W.
West Side Irrigation District	1,315	658,000	986	685	513	632	2,816	290	34	3,072	R2–P1W.
Glenn Colusa Irrigation District	1,860	925,000	1,395	966	725	882	3,968		199	3,769	R2–P1W.
Reclamation District No. 2035	1,135	466,000	851	590	443	342	2,226	250	26	2,450	R2–P1W.
Plumas Sierra REA	2,225	925,000	1,670	1,156	867	694	4,387		220	4,167	R2–F2W.
City of Roseville	19,450	6,581,000	14,560	10,100	7,580	3,040	35,280	4,275	423	39,132	R2–F2W.
Sacramento Muncipal Utility District	53,200	25,330,000	39,900	27,664	20,748	22,996	111,308		11,131	100,167	Contract.
Without San Luis unit											
Federal agencies:											
Ames Laboratory, NACA	100,000	29,200,000	75,000	52,000	39,000	6,400	172,400		8,620	163,780	
	50,000	21,900,000	37,500	26,000	19,500	17,800	100,800		5,040	95,760	R2–F2W.
Total										68,020	
AEC, Livermore	4,430	1,760,000	3,323	2,304	1,728	1,216	8,571	985	103	9,453	R2–F2W.
12th Naval District	24,000	8,800,000	18,000	12,480	9,360	5,120	44,960	5,280	540	49,700	R2–F2W.
Other preference agencies:											
City of Palo Alto	26,380	10,400,000	19,790	13,720	10,290	7,080	50,880		1,554	48,336	R2–F2W.
Sacramento Muncipal Utility District	105,000	49,680,000	78,750	54,600	40,950	44,760	219,060		21,906	197,154	Contract.

Computation of average monthly costs to customers under Pacific Gas & Electric Co.'s rate schedule A–13

Customer	Monthly (kilowatts)	Average (kilowatt-hours)	1st 6,000 kilowatt-hours	Next 50 kilowatt-hours per kilowatt	Next 150 kilowatt-hours per kilowatt		Next 100 kilowatt-hours per kilowatt	Balance	Gross bill	Preference discount	Voltage discount	Net bill
					100,000 kilowatt-hours	Balance						
With San Luis unit												
Federal agencies:												
Benicia Arsenal	3,870	833,000	$150	$4,064	$1,200	$4,084	$451		$9,949	$139	$398	$9,412
Camp Beale	940	433,000	150	987	1,200	349	799	$870	4,355	44		4,311
Castle Air Force Base	3,730	1,541,000	150	3,917	1,200	3,906	3,171	2,496	14,840	148	593	14,099
Mather Air Force Base	4,460	1,841,000	150	4,683	1,200	4,837	3,791	2,982	17,643	159	529	16,955
Moffett Field, Naval Air Station	3,440	1,358,000	150	3,612	1,200	3,536	2,924	1,920	13,342	67	534	12,741
Naval Supply, Stockton	4,295	1,016,000	150	4,510	1,200	4,626	1,284		11,770	82	471	11,217
Parks Air Force Base	2,985	1,458,000	150	3,134	1,200	2,956	2,537	3,389	13,316			
Sharpe General Depot:												
Lathrop	695	133,000	150	730	1,107				1,987	28	60	1,899
Tracey	457	92,000	150	480	758				1,388	10	42	1,336
Camp Stoneman	139	17,000	150	146	49				345		10	335
Mare Island, Navy	22,900	9,813,000	150	24,045	1,200	28,348	19,465	17,622	90,830	1,090	3,633	86,107
Port Chicago, Naval Air Depot	2,010	925,000	150	2,111	1,200	1,713	1,709	1,896	8,779	−9	351	8,437
Travis Air Force Base	5,000	2,382,000	150	5,250	1,200	5,525	4,250	5,256	21,631	65	865	20,701
Other preference agencies:												
Deuel Vocational Institution	1,080	466,000	150	1,134	1,200	527	918	816	4,745	38	142	4,565
Folsom State Prison	1,790	750,000	150	1,880	1,200	1,432	1,522	1,242	7,426	89	223	7,114
Without San Luis unit												
Federal agencies:												
AEC, Livermore	4,431	1,760,000	150	4,653	1,200	4,800	3,766	2,548	17,117	171	685	16,261
12th Naval District	24,013	8,800,000	150	25,214	1,200	29,767	20,411	9,541	86,283	863		85,420

Computation of average monthly costs to customers under Pacific Gas & Electric Co.'s schedule PA–1

Customer	Connected horsepower	Average monthly kilowatt-hours	Service charge per horsepower	1st block	2d block	3d block	Transformer ownership credit	Net bill
With San Luis unit								
Other preference agencies:								
Provident Irrigation District	670	117,000	$268	$642	$475	$28	----------	$1,413
West Side Irrigation District	2,125	658,000	797	2,037	1,505	1,671	----------	6,010
Glenn Colusa Irrigation District	3,200	925,000	1,067	3,066	2,266	2,154	$133	8,420
Reclamation district No. 2035	1,100	466,000	413	1,054	779	1,554	----------	3,800

Computation of average monthly cost to customers under Pacific Gas & Electric Co.'s schedule R

Customer	Monthly average		Demand charge			Energy charge				Voltage discount	Power factor correction	Additional discount	Net bill
	Kilowatts	Kilowatt-hours	2 megawatts	Balance	Total	1st block	2d block	3d block	Total				
With San Luis unit													
Plumas Sierra REA	2,225	925,000	$1,920	$113	$2,033	$2,937	$2,103	$1,288	$6,328	$495	$55	----------	$7,811
City of Roseville	19,450	6,581,000	1,920	8,735	10,655	25,674	18,380	3,730	47,784	----------	584	----------	57,855
Without San Luis unit													
City of Palo Alto	26,400	10,400,000	1,920	12,200	14,120	34,848	24,948	11,200	70,996	4,246	809	----------	80,061

Service under special rate similar to schedule R except for an additional discount of 9 percent

Customer	Monthly average		Demand charge			Energy charge				Voltage discount	Power factor correction	Additional discount	Net bill
	Kilowatts	Kilowatt-hours	2 megawatts	Balance	Total	1st block	2d block	3d block	Total				
With San Luis unit													
Sacramento Municipal Utility District	53,200	25,330,000	$1,920	$25,600	$27,520	$70,224	$46,294	$42,165	$158,683	$8,888	$2,125	$15,770	$159,420
Without San Luis unit													
Sacramento Municipal Utility District	104,700	49,680,000	1,920	51,350	53,270	134,350	91,090	82,220	307,660	17,220	4,120	30,560	309,030

Computations of average monthly cost of power to Ames Laboratory (NACA) under existing agreement with Pacific Gas & Electric Co.

With San Luis unit (power factor, 99 percent):	
50,000 kilowatts, at $0.65 per kilowatt	$32,500
21,900,000 kilowatt-hours, at $0.00576 per kilowatt-hour	126,144
Total	158,644
Less power factor adjustment, 1.4 percent	2,221
Total	156,423
Without San Luis unit (power factor, 99 percent):	
50,000 kilowatts, at $0.65 per kilowatt	32,500
7,300,000 kilowatt-hours, at $0.00576 per kilowatt-hour	42,048
Total	74,548
Less power factor adjustment, 1.4 percent	1,044
Total	73,504

EXHIBIT 7–1

Central Valley project—Estimated flow through powerplants

	Acre-feet
Shasta Reservoir:	
Average inflow (1905–51) [1]	5,408,000
Evaporation [2]	87,000
Spill [3]	701,000
Flow through plant	4,620,000
Keswick Reservoir:	
(*a*) Excluding Trinity River division:	
Average inflow from Shasta (1905–51)	5,321,000
Spill beyond plant capability [4]	781,000
Flow through plant	4,540,000
(*b*) Including Trinity River division (fiscal year 2013):	
Average inflow from Shasta (1905–51)	5,321,000
Diversion from Whiskeytown Reservoir	860,000
Spill beyond plant capability [4]	851,000
Flow through powerplant	5,330,000
Folsom Reservoir:	
Average inflow (1905–51) [5]	2,626,000
Evaporation [2]	31,000
North Fork and Natomas ditches [2]	65,000
North suburban area [2]	80,000
Spill [6]	450,000
Flow through plant	2,000,000
Nimbus Reservoir:	
Average inflow from Folsom (1905–51)	2,450,000
Folsom South diversion [7]	427,000
Spill [6]	838,000
Flow through powerplant	1,185,000
Trinity River division: Flow at Lewiston Reservoir (1894–1953) [8]	1,282,000

See footnotes at end of table, p. 43.

EXHIBIT 7-1—Continued

Central Valley project—Estimated flow through powerplants—Continued

	Acre-feet
Trinity Reservoir:	
Inflow [9]	1,220,000
Evaporation [2]	30,000
Spill [6]	260,000
Flow through powerplant	930,000
Lewiston Reservoir:	
Inflow from Trinity	1,190,000
Accretion [9]	62,000
Downstream fish release	120,000
Spill [10]	312,000
Transbasin diversion	820,000
Whiskeytown Reservoir:	
Clear Creek inflow [11]	220,000
Transbasin diversion from Lewiston	820,000
Evaporation [2]	11,000
Downstream fish release	19,000
Irrigation diversion (fiscal year 2013)	65,000
Spill down Clear Creek [6]	85,000
Flow through powerplant	860,000

[1] Years 1921–22 to 1940–41 from operation 75–F. Years 1941–42 to 1950–51 from operating records by same method described in operation 75–F. Years 1904–5 to 1920–21 from Correlation of Annual Recorded Sacramento River Flows at Red Bluff and Inflow to Shasta.

[2] From operation 75–F; assumed same for long-term average.

[3] Based on operating records for period 1946–56 inclusive, which show 874,000 acre-feet spilled from an inflow of 5,665,000 acre-feet per year. The spill was arbitrarily reduced on the assumption that larger amounts of nonfirm energy can be utilized in the future.

[4] Estimated on the basis of Keswick operating records modified by judgment for future conditions.

[5] Years 1904–20 from U. S. Bureau of Reclamation Hydrology of American River Drainage Basin dated Dec. 15, 1942. Years 1920–21 to 1950–51 from data estimated by State division of water resources modified by 36,000 acre-feet per year for upstream diversions.

[6] Estimated on the basis of operation 75–F increased by judgment for the greater long-term inflow.

[7] 50-year average with a 50-percent deficiency taken in 3 years.

[8] From State Bulletin No. 1, Water Resources of California, dated 1951 and U. S. Geological Survey Water Supply Papers.

[9] Accretion between Lewiston and Trinity estimated in ratio of drainage basins or 4.83 percent of total.

[10] Estimate of spill was based on operation 75–F. It was assumed that only a small part of the additional long-term runoff as compared to the 20-year average could be diverted since most of this additional water would occur at times of flood flows in the Sacramento Valley.

[11] From operation 75–F for the period 1921–22 to 1940–41 increased by 10 percent to represent a long-term average.

EXHIBIT 7–2

Central Valley project including Trinity River division average annual generation

Plant	Flow through powerplant (1,000 acre-feet)	Kilowatt-hours per acre-foot	Net hydro generation (million kilowatt-hours)
Shasta	4,620	[1] 368	1,700
Keswick:			
(*a*) Excluding Trinity	4,540	[1] 76	345
(*b*) Including Trinity	5,330	[1] 76	405
Folsom	2,000	[1] 260	520
Nimbus	1,185	[1] 38	45
Trinity	930	[2] 317	295
Clear Creek	820	[3] 500	410
Spring Creek	860	[4] 472	405

[1] As obtained from operation study No. 75–F.

[2] Based on average storage of 1,500,000 acre-feet as determined from operation 75–F modified as shown on attached curve to reflect the change in location of the Trinity Dam to the Papoose site.

[3] Kilowatt-hours per acre-foot factor for Clear Creek based on following assumptions: (*a*) Average forebay water surface elevation 1,900 feet. (*b*) Average tailwater elevation 1,230 feet.

[4] Kilowatt-hours per acre-foot factor for Spring Creek based on assumed average Whiskeytown storage of 198,000 acre-feet and the attached curve.

EXHIBIT 7–3

Central Valley project—Buildup by fiscal years energy supply and disposition with all-Federal Trinity River development

[Million kilowatt-hours]

Fiscal year	Source			Disposition					Exchange with P. G. & E. Co. (Art. 12–175r–3428)	
				Sales				Loss		
	Net hydro [1]	Receipts [2]	Total	Interdepartmental [3]	Firm to preferred agencies [4]	Sales to P. G. & E. Co.	Total sales	System losses [5]	Net for year [6]	Accumulation [7]
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1956										7,400
1957	3,018		3,018	321	1,685	798	2,804	214	798	8,198
1958	2,806	96	2,902	334	1,809	575	2,718	184	479	8,677
1959	2,811	129	2,940	344	1,946	467	2,757	183	338	9,015
1960	2,610	322	2,932	349	2,130	261	2,740	192	−61	8,954
1961	2,610	322	2,932	361	2,130	246	2,737	195	−76	8,878
1962	2,610	322	2,932	373	2,130	233	2,736	196	−89	8,789
1963	3,148	154	3,302	386	2,130	552	3,068	234	398	9,187
1964	3,148	154	3,302	399	2,130	537	3,066	236	383	9,570
1965	3,148	154	3,302	404	2,130	532	3,066	236	378	9,948
1966	3,810	416	4,226	410	3,100	400	3,910	316	−16	9,932
1967	3,810	418	4,228	415	3,100	396	3,911	317	−22	9,910
1968	3,810	420	4,230	418	3,100	395	3,913	317	−25	9,885
1969	3,810	421	4,231	419	3,100	395	3,914	317	−26	9,859
1970	3,810	421	4,231	420	3,100	394	3,914	317	−27	9,832
1971	3,810	422	4,232	422	3,100	393	3,915	317	−29	9,803
1972	3,810	423	4,233	423	3,100	392	3,915	318	−31	9,772
1973	3,810	424	4,234	424	3,100	392	3,916	318	−32	9,740
1974	3,810	425	4,235	426	3,100	391	3,917	318	−34	9,706
1975	3,810	426	4,236	427	3,100	391	3,918	318	−35	9,671
1976	3,810	426	4,236	427	3,100	391	3,918	318	−35	9,636
1977–88	3,810	426	4,236	427	3,100	391	3,918	318	−35	9,601 9,216
1989	3,809	426	4,235	427	3,100	390	3,917	318	−36	9,180
1990	3,808	426	4,234	427	3,100	389	3,916	318	−37	9,143
1991	3,807	426	4,233	427	3,100	388	3,915	318	−38	9,105
1992	3,806	426	4,232	427	3,100	387	3,914	318	−39	9,066
1993	3,805	426	4,231	427	3,100	386	3,913	318	−40	9,026
1994	3,804	426	4,230	427	3,100	385	3,912	318	−41	8,985
1995	3,803	426	4,229	427	3,100	384	3,911	318	−42	8,943
1996	3,802	426	4,228	427	3,100	384	3,911	317	−42	8,901
1997	3,801	426	4,227	427	3,100	383	3,910	317	−43	8,858
1998	3,800	426	4,226	427	3,100	382	3,909	317	−44	8,814
1999	3,799	426	4,225	427	3,100	381	3,908	317	−45	8,769
2000	3,798	426	4,224	427	3,100	380	3,907	317	−46	8,723
2001	3,797	426	4,223	427	3,100	379	3,906	317	−47	8,676
2002	3,796	426	4,222	427	3,100	379	3,906	316	−47	8,629
2003	3,795	426	4,221	427	3,100	378	3,905	316	−48	8,581
2004	3,794	426	4,220	427	3,100	377	3,904	316	−49	8,532
2005	3,793	426	4,219	427	3,100	376	3,903	316	−50	8,482
2006	3,792	426	4,218	427	3,100	375	3,902	316	−51	8,431
2007	3,791	426	4,217	427	3,100	374	3,901	316	−52	8,379
2008	3,790	426	4,216	427	3,100	374	3,901	315	−52	8,327
2009	3,788	426	4,214	427	3,100	372	3,899	315	−54	8,273
2010	3,786	426	4,212	427	3,100	370	3,897	315	−56	8,217
2011	3,784	426	4,210	427	3,100	368	3,895	315	−58	8,159
2012	3,782	426	4,208	427	3,100	366	3,893	315	−60	8,099
2013	3,780	426	4,206	427	3,100	364	3,891	315	−62	8,037

[1] Net generation is gross generation less plant use.

[2] Receipts—All energy purchased from other power systems for which payment of money is made.

[3] Interdepartmental—Uses for Bureau power and energy for which dollar compensation as income from sale of power is received.

[4] Firm preference agencies—Energy delivered to preference agencies on a firm power basis.

[5] System losses—The difference between the sum of the total net generated and received energy and the sum of the sales.

[6] Yearly accounting with the Pacific Gas & Electric Co. for energy sold and received.

[7] Present contract with Pacific Gas & Electric Co. provides that the accumulated total of all energy sold by the Pacific Gas & Electric Co. shall not at any time exceed the corresponding accumulated total of energy sold to the Bureau. This study limited preference agency load in order that the accumulation at end of fiscal year 2013 would be approximately the same accumulation at end of fiscal year 1957.

EXHIBIT 7–4

Central Valley project including Trinity River division—All-Federal development—Estimated annual system dependable capacity and disposition

Fiscal year	System dependable capacity	Simultaneous demand of preferred agency load (megawatts)	Firm capacity available to P. G. & E. Co.	Estimated non-dependable capacity
1957	[1] 450	323	127	25
1958	450	353	97	25
1959	[1] 450	390	60	25
1960	[2] 440	400	40	30
1961	440	400	40	30
1962	440	400	40	30
1963	440	400	40	[3] 100
1964	430	400	30	100
1965	[3] 430	400	30	100
1966–2013	[4] 730	650	80	[5] 50

[1] Based on operation 65–0.
[2] Arbitrary decreased from 450 megawatts because of increased water use requirements.
[3] Water from Trinity River development available for diversion at Lewiston Reservoir.
[4] Based on total energy available in dry period 1930–33.
[5] Based on nondependable declaration as follows: 6 months, March through August, 90 megawatts; 5 months, October through February, 30 megawatts; total for year, 690 megawatts, or approximately 50 megawatts per year.

EXHIBIT 7–5

Central Valley project including Trinity River division—Buildup by fiscal years energy supply and disposition—Partnership proposal

[Million kilowatt-hours]

Fiscal year	Source			Disposition					Exchange with P. G. & E. Co. (Art. 12–175r–3428)	
				Sales				Loss		
	Net hydro [1]	Receipts [2]	Total	Interdepartmental [3]	Firm to preferred agencies [4]	Sales to P. G. & E. Co.	Total sales	System losses [5]	Net interchange/year [6]	Accumulation [7]
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1956										7,400
1957	3,018		3,018	321	1,685	798	2,804	214	798	8,198
1958	2,806	96	2,902	334	1,809	575	2,718	184	479	8,677
1959	2,811	129	2,940	344	1,946	467	2,757	183	338	9,015
1960	2,610	322	2,932	349	2,130	261	2,740	192	−61	8,954
1961	2,610	337	2,947	361	2,130	261	2,752	195	−76	8,878
1962	2,610	350	2,960	373	2,130	261	2,764	196	−89	8,789
1963	2,640	333	2,973	386	2,130	261	2,777	196	−72	8,717
1964	2,640	348	2,988	399	2,130	260	2,789	199	−88	8,629
1965	2,640	351	2,991	404	2,130	258	2,792	199	−93	8,536
1966	2,670	329	2,999	410	2,130	258	2,798	201	−71	8,465
1967	2,670	335	3,005	415	2,130	258	2,803	202	−77	8,388
1968	2,670	338	3,008	418	2,130	258	2,806	202	−80	8,308
1969	2,670	339	3,009	419	2,130	258	2,807	202	−81	8,227
1970	2,670	340	3,010	420	2,130	258	2,808	202	−82	8,145
1971	2,670	342	3,012	422	2,130	258	2,810	202	−84	8,061
1972	2,670	344	3,014	423	2,130	258	2,811	203	−86	7,975
1973	2,670	345	3,015	424	2,130	258	2,812	203	−87	7,888
1974	2,670	347	3,017	426	2,130	258	2,814	203	−89	7,799
1975	2,670	348	3,018	427	2,130	258	2,815	203	−90	7,709
1976	2,670	348	3,018	427	2,130	258	2,815	203	−90	7,619
1977	2,670	348	3,018	427	2,130	258	2,815	203	−90	7,529
1978	2,670	348	3,018	427	2,130	258	2,815	203	−90	7,439
1979	2,670	348	3,018	427	2,130	258	2,815	203	−90	7,349
1980	2,670	348	3,018	427	2,130	258	2,815	203	−90	7,259
1981	2,670	348	3,018	427	2,130	258	2,815	203	−90	7,169
1982	2,670	348	3,018	427	2,130	258	2,815	203	−90	7,079
1983	2,670	348	3,018	427	2,130	258	2,815	203	−90	6,989
1984	2,670	348	3,018	427	2,130	258	2,815	203	−90	6,899
1985	2,670	348	3,018	427	2,130	258	2,815	203	−90	6,809
1986	2,670	348	3,018	427	2,130	258	2,815	203	−90	6,719
2013	2,670	348	3,018	427	2,130	258	2,815	203	−90	4,289

NOTES

[1] Net generation is gross generation less plant use.

[2] All energy exchanged with other power systems which in some months may exceed the amount of energy purchased on a net monthly basis.

[3] Interdepartmental—Uses for Bureau power and energy for which dollar compensation as income from sale power is received.

[4] Firm preference agency—Energy delivered to preference agencies on a firm power basis limited to simultaneous demand at Tracy of 400 megawatts.

[5] System losses—The difference between the sum of the total net generated and received energy and the sum of the sales.

[6] Yearly accounting with the Pacific Gas & Electric Co. for energy surplus or deficiency in meeting preference agency firm load.

[7] Accumulated total of all energy sold to the Pacific Gas & Electric Co. from initial date of contract 175r–3428 shall not be exceeded by energy purchases from the Pacific Gas & Electric Co.

EXHIBIT 7–6

Central Valley project, including Trinity River division partnership proposal, estimated annual system dependable capacity and dispositions

[Megawatts]

Fiscal year	System dependable capacity	Simultaneous demand of preference agency load	Firm capacity available to P. G. & E. Co.	Estimated non-dependable capacity
1957	[1] 450	323	127	25
1958	450	353	97	25
1959	[1] 450	300	60	25
1960	[2] 440	400	40	30
1961	440	400	40	30
1962	440	400	40	30
1963	440	400	40	[3] 65
1964	430	400	30	65
1965	[3] 430	400	30	65
1966	450	400	50	50
1967	450	400	50	50
1968	450	400	50	50
1969	450	400	50	50
1970	440	400	40	50
1971	440	400	40	50
1972	440	400	40	50
1973	440	400	40	50
1974	430	400	30	50
1975	430	400	30	50
1976	430	400	30	50
1977	430	400	30	50
1978	420	400	20	50
1979	420	400	20	50
1980	420	400	20	50
1981	420	400	20	50
1982	410	400	10	50
1983	410	400	10	50
1984	410	400	10	50
1985	410	400	10	50
1986 to 2013	400	400	0	[4] 50

[1] Based on operation study No. 65–0.
[2] Arbitrary decreased from 450 megawatts because of increased water-use requirements.
[3] Water from Trinity River development available for diversion at Lewiston Reservoir.
[4] Based on nondependable declaration as follows: 6 months, March through August, 90 megawatts; 5 months, October through February, 30 megawatts; total megawatts for year, 690 megawatts, or approximately 50 megawatts per year.

PART II. INFORMATION AND DATA FURNISHED BY THE PACIFIC GAS & ELECTRIC CO., AND CORRESPONDENCE RELATING THERETO

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
OFFICE OF THE CHAIRMAN,
Washington, D. C., August 8, 1957.

Mr. N. R. SUTHERLAND,
President and General Manager,
Pacific Gas & Electric Co.,
San Francisco, Calif.

DEAR MR. SUTHERLAND: H. R. 6997 and H. R. 7407 have been referred to the Committee on Interior and Insular Affairs for consideration. As you know, these bills would authorize the Secretary of the Interior to enter into a long-term contract with your company for the sale of falling water from the Trinity division of the Central Valley project and to extend certain existing agreements relating to the sale and interchange of power and to transmission and exchange service (wheeling). On July 11, Secretary of the Interior Seaton reported favorably on the bills. Also, he has furnished certain studies to support his affirmative recommendation, copies of the proposed contracts, etc. A considerable portion of the studies are based, directly or indirectly, on information originating with Pacific Gas & Electric.

Since your proposal to buy Trinity falling water represents a departure from traditional principles in the disposition of power from large Federal reclamation projects, the committee wishes to consider these bills most carefully. You will recognize that there are many facets to the problem. Among other things, if policywise, the Congress should decide in favor of private development, we want to be satisfied that the contract is a fair one, both to the company and the Government. With this in mind, and in the interest of conserving the time of committee members, it would be most helpful if your company could provide the committee with the following information:

1. In connection with your operation study designated as T–3, the committee should like to have:

(*a*) A detailed statement of the criteria employed and the bases or derivation of these criteria. Among other things, please spell out the criteria used in determining the dependable capacity, nondependable capacity, and surplus capacity assumed for each powerplant.

(*b*) Detailed backup explanation for the various row headings appearing in column 1.

2. It is assumed that the proposed payments per acre-foot for falling water, set forth in article 13 of the draft of agreement for purchase of use of falling water, are based on alternative costs of equiva-

lent steam power. In connection with this, can you furnish us the following information?

(*a*) Where did you assume the alternative steam plant would be located?

(*b*) May we have your estimated construction and operating cost for such alternative plant, including a full explanation of your assumptions as to cost of fuel per barrel and how it was derived?

(*c*) Did you project future fuel costs in the operation of such a steam plant? If so, may we have a copy of that projection?

(*d*) What steam plant efficiency did you assume; i. e., the energy derived per barrel of fuel?

(*e*) What transmission losses (both energy and capacity) did you assume between the Trinity plants and the steam plant? Please give the detailed bases of these calculations.

(*f*) Were any factors used to reflect additional dependability of hydro plants as opposed to steam plants? If so, how were these factors derived and how were they applied?

3. Please indicate the additional transmission lines, if any, you would expect to build in order to move Trinity power to point of use, and provide your estimate of construction and operating costs for such lines.

4. Please furnish a statement of your estimated cost of constructing each of the powerplants contemplated and their related switchyards and transmission lines.

5. The proposed arrangement between your company and the Department of the Interior would continue the existing arrangement with respect to wheeling changes and losses as set forth in articles 7 (d) and 7 (e) of the proposed supplement to contract 175r–2650. Question has been raised with respect to the fairness of these charges. Since it is proposed that they be perpetuated for 50 years, can you furnish the committee with a full explanation of the engineering and economic bases for these charges and losses?

6. In the studies which Secretary Seaton has furnished this committee indicating the excess power costs which would be incurred by Federal and preference agencies if Trinity were not developed by the Government, certain assumptions were made with respect to the applicability of certain rates to Ames Laboratory and to the Sacramento Municipal Utility District. Presumably these rates were used in the study after consultation with your representatives. Accordingly, would you please furnish the committee with copies of the rate schedules under which power would be sold to Ames Laboratory and to Sacramento Municipal Utility District, as an alternative to Federal Trinity power, together with any approvals accorded these rates by the Public Utilities Commission?

Your cooperation in responding to this letter will be of great value to the committee and I am sure will expedite a hearing on the Trinity question.

Sincerely yours,

CLAIR ENGLE, *Chairman.*

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
OFFICE OF THE CHAIRMAN,
Washington, D. C., October 15, 1957.

Mr. N. R. SUTHERLAND,
President and General Manager,
Pacific Gas & Electric Co.,
San Francisco, Calif.

DEAR MR. SUTHERLAND: As you know, this committee plans early hearings in the next session of Congress on the question whether the falling water from the Bureau of Reclamation's Trinity project should be sold to Pacific Gas & Electric Co. On August 8, I wrote asking for certain information which would be helpful to the committee in evaluating the proposal. Although I have Mr. Gerdes' acknowledgment of August 28, none of the material requested has been furnished.

I am sure we agree on the advisability of early hearings on the Trinity question. In order to make this a reality, the staff and the committee must gather together all necessary information well in advance of the hearings, so as to provide adequate time for study and evaluation. If all the information requested is not readily available, I suggest that you furnish it on a piecemeal basis. For example, the question of excess power costs to preference agencies resulting from a Pacific Gas & Electric Co. development is one of the most important problems to consider. Consequently, your prompt response to my August inquiry regarding the Pacific Gas & Electric Co. rates you consider applicable to Ames Laboratory and the Sacramento Municipal Utility District would be most helpful. Since Pacific Gas & Electric Co. assisted the Secretary in the preparation of the excess cost study, I am sure these matters were thoroughly discussed and the information is readily available.

Your usual cooperation is solicited.

Very truly yours,

CLAIR ENGLE, *Chairman.*

PACIFIC GAS & ELECTRIC CO.,
San Francisco, Calif., October 21, 1957.

Hon. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D. C.

DEAR CONGRESSMAN ENGLE: This is in reply to your letter dated October 15, 1957, to Mr. N. R. Sutherland. In accordance with your suggestion, I am pleased to enclose memorandums on the rate which we consider applicable to Ames Laboratory and Sacramento Municipal Utility District.

Substantial progress has been made in preparing the remainder of the information which you have requested and it will be forwarded to you in the near future.

Very truly yours,

ROBERT H. GERDES.

ENCLOSURE NO. 1

PACIFIC GAS & ELECTRIC CO., SERVICE TO AMES LABORATORY

Pacific Gas & Electric Co. supplies power to Ames Laboratory under contract No. NA2–926(w), approved by California Public Utilities Commission, decision No. 55107, dated June 11, 1957.

Pertinent rate provisions for service (on and after November 1, 1955) are as follows:

PAYMENTS FOR CAPACITY AND ENERGY

12. (a) United States shall pay each month for the capacity and energy sold to it hereunder at monthly rates and charges, and upon conditions as follows:

(1) *Demand charges.*—

(i) Ames' on-peak demand on Pacific at $0.65 per kilowatt per month.

(ii) Ames' off-peak demand on Pacific and extra capacity purchased under article 11 hereof at $0.15 per kilowatt per month.

(2) *Energy charge (to be added to demand charge).*—Ames' energy requirements from Pacific at $0.00576 per kilowatt-hour.

(3) *Power factor adjustment and power factor.*—The total charge (except the annual minimum demand charge) for any month as computed on the above rates shall be decreased or increased, respectively, by 0.1 percent for each 1 percent that the average power factor of Ames' demand in that month is greater or less than 85 percent. Such average power factor shall be computed (to the nearest whole percent) from the ratio of lagging kilovolt-ampere-hours to the kilowatt-hours consumed in the month; provided that no power factor correction shall be made for any month in which the greatest Ames' demand is less than 10 percent of the greatest such demand in the preceding 11 months. Ames shall conduct its operations so that the power factor at the times of its heavy loads shall not be less than 97 percent.

Ames' on-peak demand on Pacific is the amount of kilowatts by which the greatest Ames' demand occurring during Pacific's peak load period (between 6:30 a. m. and 10:30 p. m. on any day except Sundays and the following holidays: New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, and Christmas Day) in any month exceeds Ames' demand on the United States Bureau of Reclamation Central Valley project (50,000 kilowatts) during the same month.

Ames' off-peak demand on Pacific is the amount of kilowatts by which the greatest Ames' demand occurring outside Pacific's peak load period in any month exceeds the sum of (1) Ames' demand on Reclamation in that month, and (2) Ames' on-peak demand on Pacific occurring in that month.

Ames' energy requirements from Pacific is the amount of kilowatt-hours by which the total amount of kilowatt-hours used by Ames in any 1 month exceeds Ames' energy requirements from Reclamation (the amount of kilowatt-hours used by Ames within Ames' demand on Reclamation, provided that such amount shall not exceed in any month the product of 540 and Ames' demand on Reclamation).

ENCLOSURE NO. 2

PACIFIC GAS & ELECTRIC CO. SERVICE TO SACRAMENTO MUNICIPAL UTILITY DISTRICT

SMUD is not now served by Pacific Gas & Electric Co., although it has a contract for steam firming service in lieu of SMUD's installing steam electric power generation, approved by California Public Utilities Commission Decision No. 52086, dated October 18, 1955, in Application No. 37129.

Such service, however, is not comparable to the block of power contemplated to be supplied in the studies which Secretary Seaton furnished the House committee. For such a block of power, it was estimated that a rate equal to schedule R, attached, less 9 percent would be appropriate because the level of rate charged SMUD by the company when it last served SMUD was approximately 9 percent below the level of the regular resale schedule.

The reduction in the order of 9 percent was accomplished by combining the simultaneous demands at the several points of delivery as they existed between 1947 and 1951 and billing as if served at 1 delivery point.

SMUD now has provided the necessary facilities so that it in fact takes delivery at a single point at high voltage, 230 kilovolts. The 9 percent reduction was applied in recognition of the fact that the supplier would be saved the expense of the facilities supplied by SMUD in tieing its several delivery points together and

providing its own step-down. The Bureau recognized this saving by allowing SMUD a 10 percent discount from the Bureau's regular schedule.

Provision would be made under schedule R for such a block of service to SMUD to allow purchase of 290,000 kilowatt block of power now supplied to SMUD by the Bureau of Reclamation.

Pacific Gas and Electric Company
San Francisco, California

REVISED CAL. P. U. C. SHEET No. 2312-E
Canceling Revised Cal. P. U. C. Sheet No. 2200-E

SCHEDULE R

RESALE SERVICE

Applicability

This schedule is applicable to electric energy supplied at standard voltages of 2,200 volts or over to other electric utilities and to municipalities for distribution and resale to the general public where such utilities or municipalities take their entire electric energy supply from the Company. An initial three-year contract is required when such utilities or municipalities first take service from the Company.

Territory

The entire territory served except the Humboldt Division, the Fort Bragg Area and the service area of former Coast Counties Gas and Electric Company.

Rate (A)

Service at 2,200 volts up to and including 25,000 volts.

Demand charge:	
First 50 kw. or less of maximum demand	$90.00 per month
Next 150 kw. of maximum demand	$1.80 per kw. per month
Next 300 kw. of maximum demand	1.20 per kw. per month
Next 500 kw. of maximum demand	.90 per kw. per month
Next 1,000 kw. of maximum demand	.75 per kw. per month
All excess kw. of maximum demand	.50 per kw. per month
Energy Charge (to be added to the Demand Charge):	
First 150 kwh. per kw. per month	.88¢ per kwh.
Next 150 kwh. per kw. per month	.63¢ per kwh.
All over 300 kwh. per kw. per month	.50¢ per kwh.

Except that for all energy furnished in excess of 8,000,000 kwh. per month, the above energy rates shall be reduced by 0.5 mill per kwh.

Minimum charge: Applicable when the maximum demand in the current month or in one or more of the preceding 11 months has exceeded 25,000 kw.: $1.40 per month per kw. of such maximum demand.

Rate (B)

Service at line voltages in excess of 25,000 volts.

The rate is the same as that set forth under Rate (A) above with the demand charge decreased by 15 percent and the energy charge decreased by 3 percent, and the minimum charge decreased by 10¢ per kw.

Special conditions

(a) *Voltage.*—Service under Rate (A) will be supplied by the Company at standard voltages of 2,200 volts or more up to and including 25,000 volts, as requested by the customer.

Service under Rate (B) will be supplied by the Company at standard line voltages above 25,000 volts as available.

(b) *Demand.*—The maximum demand in any month will be the average kw. delivery of the 30-minute interval in which such delivery is greater than in any other 30-minute interval in the month; provided, that if the load is intermittent or subject to violent fluctuations a 5-minute interval may be used. The maximum demand to be used in computing charges other than minimum charge under the above rates will be the mean of the actual maximum so determined for the current month and the highest such demand occurring in the year ending witn the current month.

(c) *Off peak demand.*—Any customer served on this schedule may, upon request, have his demands occurring between 10:30 P. M. and 6:30 A. M. of the following day and on Sundays and legal holidays ignored in determining the billing demand.

(d) *Power factor.*—The total charge for any month as computed on the above rates will be decreased or increased, respectively, by 0.1% for each 1% that the average power factor of customer's load in that month was greater or less than 85%, such average power factor to be computed (to the nearest whole per cent) from the ratio of lagging kilovolt-ampere-hours to kilowatt-hours consumed in the month, provided, however, that no power factor correction will be made for any month when customer's maximum demand is less than 10% of the highest demand in the preceding eleven months.

Advice No. 125–E
Decision No. 50366

Date Filed September 30, 1954
Effective August 31, 1954
Resolution No.

Issued by N. R. Sutherland, Vice President and General Manager

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PACIFIC GAS & ELECTRIC CO.,
San Francisco, Calif., October 31, 1957.

Hon. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D. C.

DEAR CONGRESSMAN ENGLE: To supplement the information forwarded by my letter of October 21, 1957, I am pleased to enclose six additional memorandums prepared by our engineers in answer to your request for certain detailed information on joint development of the Trinity project.

You will note that the enclosures have been numbered (1a, 1b, 2, 3, 4, and 5) to correspond to the numbered requests set forth in your letter of August 8, 1957. The sixth question of your letter was answered by the memorandums transmitted to you on October 21.

Very truly yours,

ROBERT H. GERDES.

ENCLOSURE 1a

TRINITY RIVER PROJECT—STATEMENT OF CRITERIA EMPLOYED—OPERATION STUDY T–3

The basic criterion for Operation Study T–3 was established with the objective of operating the Trinity development to provide optimum irrigation water to the Central Valley and at the same time to produce byproduct power to yield maximum financial aid to irrigation.

To meet this basic criterion, the development was operated under Operation Study T–3 to meet, together with water releases from existing Central Valley project features, the mandatory water demands of the project as established by the United States Bureau of Reclamation, with the water supply of record, identical to that employed by the Bureau in its Trinity studies, utilized through the project physical features (dams, reservoirs, and tunnels) planned by the Bureau.

Within this fixed framework of established water supply, storage, and conveyance facilities, and mandatory water release requirements, the development was operated to obtain the most comprehensive development of the available power potential. This was done by operating the proposed Trinity plants in conjunction with the company's widespread regional system, with its many sources of power supply and its diversified load, which permits lower capacity factor operation and the production of greater amounts of valuable dependable power by the Trinity plants than other methods of operation.

Details or bases of criteria for Operation Study T–3 are as follows:

I. Period of study

The development was operated over the 20-year historical period of record October 1921 to September 1941, inclusive, which period includes the most adverse period of record, 1928–34.

II. Water supply

Water supply for the period of study used in Operation Study T–3 were those developed from stream-gaging station records by the Bureau of Reclamation for use in its Trinity studies. Principal records utilized were (1) Trinity River at Trinity Dam site; (2) accretion between Trinity and Lewiston Dam sites; and (3) Clear Creek at Whiskeytown Dam site.

III. Mandatory water demands

Water release requirements established by the Bureau of Reclamation for mandatory water demands to meet (1) fish life requirements below Lewiston Dam site; (2) irrigation purposes below Whiskeytown Dam site during ultimate period of Trinity project operation; and (3) fish life requirements below Whiskeytown Dam site were used and met in Operation Study T–3. Full consideration was also given to Bureau established mandatory water demands to best meet irrigation, municipal and industrial, navigation, fish life and salinity purposes below Keswick with water releases from the Trinity project and the Central Valley project.

IV. Physical features

The development was operated utilizing, without change, the project storage and conveyance facilities in the locations and dimensions set forth in the Bureau of Reclamation's project plan as revised in 1956. Such planned storage and conveyance works are:

(1) Trinity Dam and spillway, in the main stream of the Trinity River below Stuart Fork and immediately below Papoose Creek, creating a reservoir with a gross capacity of 2,500,000 acre-feet at maximum normal water surface elevation 2,370 and providing 2,160,000 acre-feet of usable storage capacity above elevation 2,145;

(2) Trinity conduit, providing a capacity of 3,700 cubic feet per second, extending from Trinity Reservoir approximately 2,900 feet to the Trinity powerplant;

(3) Trinity tailrace channel, providing a capacity of not less than 3,700 cubic feet per second with water surface in Lewiston Reservoir at elevation 1,898, extending from the tailrace of the Trinity powerplant into Lewiston Reservoir;

(4) Lewiston diversion dam and spillway, in the main stream of the Trinity River approximately 2½ miles above the town of Lewiston, creating a reservoir having a maximum normal water surface at elevation 1,902 and providing approximately 2,500 acre-feet of usable storage capacity above elevation 1,898;

(5) Lewiston conduit, providing a capacity of 150 cubic feet per second, extending from Lewiston Reservoir approximately 450 feet to the Lewiston powerplant;

(6) Clear Creek conduit, providing a capacity of 3,200 cubic feet per second, extending from Lewiston Reservoir approximately 11 miles to the Clear Creek powerplant (tunnel diameter 17 feet 6 inches, lined or unlined equivalent);

(7) Whiskeytown Dam and spillway, in the main stream of Clear Creek approximately 2½ miles below Whiskeytown, creating a reservoir with a gross capacity of 250,000 acre-feet at maximum normal water surface elevation 1,210 and providing 40,000 acre-feet of usable storage capacity above elevation 1,197 (initial operation period), and providing 206,000 acre-feet of usable storage capacity above elevation 1,100 (ultimate operation); and

(8) Spring Creek conduit, providing a capacity of 3,600 cubic feet per second, extending from Whiskeytown Reservoir approximately 3 miles to the Spring Creek powerplant (tunnel diameter 18 feet 6 inches lined or unlined equivalent).

V. Water storage and release criteria

Storage and diversion operations were governed by criteria established to assure that the project would operate through the most critical period of record without failure of water supply and at the same time to utilize the total available water supply during such period. To accomplish this, the criteria requires that Trinity Reservoir, which would have been filled (historically) in May 1928, would be drawn to dead storage of 340,000 acre-feet at the end of October 1934. To protect against the failure of water supply within the 1928–34 period, minimum monthly storage levels at Trinity Reservoir based on critical periods were established. Maximum storage capacities based on higher runoff periods were likewise developed to provide a basis for release of waters in excess to those required to maintain project operation over the critical period. Monthly maximum and minimum reservoir criteria and operations thereunder as developed for operation prior to commencement of irrigation from the Whiskeytown Reservoir (initial period) and for operation with ultimate irrigation from Whiskeytown (ultimate operation) are set forth in draft of "agreement for purchase of use of falling water

and license to develop electric power" on the Trinity project, published in House Document 94, 85th Congress, 1st session. Also set forth in the agreement are monthly Whiskeytown Reservoir criteria, which were developed in the same manner as the Trinity criteria.

Releases of water criteria were based on the previously described water demands and the subsequently described power criteria.

VI. Power criteria

Minimum capacity factors used in Operation Study T–3 were those specified in paragraph (c), article 10 of the United States Bureau of Reclamation-Pacific Gas & Electric sales and interchange contract (No. I 75r–3428) dated October 3, 1951. These factors were modified, within the limits specified in said contract, to increase the factors (and thus the water releases) in the months of June, July, and August to best support the irrigation demand pattern of the Central Valley project.

VII. Power capacities

A. *Installed.*—Installed capacities were determined on the basis of static heads and peak design flows for each plant.

B. *Dependable.*—The dependable capacity at each plant was determined as the capacity (together with minimum amounts of associated energy as described in VI above) available from the plant at all times during the 20-year period of study.

C. *Nondependable.*—Nondependable capacity was determined to be the capacity (together with minimum associated energy) over and above dependable capacity and associated energy, that remains available for 5 consecutive months or more.

ENCLOSURE 1b

TRINITY RIVER PROJECT—DETAILED EXPLANATION OPERATION STUDY T–3

The operation study is divided into two sections. The first deals with conditions during the initial operation period, that is, prior to meeting any local irrigation demands from Whiskeytown Reservoir, and corresponding to project year 1979. The second section deals with conditions in the ultimate year of operation, i. e., after the irrigation demands from Whiskeytown Reservoir have built up to ultimate demands, and corresponding to project year 2013.

The numerical order in which the columns are arranged is not necessarily the sequence in which they were computed. The arrangement adopted was used so that columns relating to a certain reservoir or plant would be grouped together and thus simplify the operation.

Following is a column by column description of the mechanics of the operation:

Column 1—Inflow to Trinity Reservoir, thousand acre-feet

Basic data from table dated January 27, 1956, transmitted by letter dated February 8, 1956 from United States Bureau of Reclamation, region 2.

Column 2—Releases for Lewiston and Whiskeytown criteria, thousand acre-feet

Col. 2=col. 22−col. 20−col. 40+col. 41+col. 43+col. 44+col. 48−col. 49 for preceding month+storage criteria for Whiskeytown for current month, or

$$\text{Col. 2}=\text{col. 22}-\text{col. 20}+\frac{3200\times\text{No. of }\overline{\text{KWH}}\text{ in table 1 modified for the month}}{12{,}100},$$

whichever is larger.

Column 3—Additional releases required for Trinity plant, thousand acre-feet

$$\text{Col. 3}=\frac{\text{Col. 11}\times\text{No. of }\overline{\text{KWH}}\text{ in table 1 modified for the month}}{\text{col. 14}}-\text{col. 2.}$$

No negatives.

Column 4—Additional releases above criteria requirements, thousand acre-feet

Col. 4=col. 8 for preceding month+col. 1−col. 2−col. 3−col. 7−maximum storage criteria for the current month,

but not greater than: $\frac{\text{Col. 10} \times \text{No. hrs. in month}}{\text{Col. 14}}$ − col. 2 − col. 3.

No negatives.

Column 5—Spill, thousand acre-feet

Col. 5=col. 8 for preceding month+col. 1−col. 2−col. 3−col. 4−col. 7−2,500.
No negatives.

Column 6—Total outflow, thousand acre-feet

Col. 6=col. 2+col. 3+col. 4+col. 5.

Column 7—Evaporation, thousand acre-feet

From graph of evaporation loss versus Trinity Reservoir storage.
Storage is that for the end of the preceding month.
Evaporation rates in feet per month are as follows:

May	0.4	October	.1
June	.5	November	−.2
July	.7	December	−.4
August	.6		
September	.4	Total	2.1

Column 8—Trinity Reservoir end of month storage, thousand acre-feet

Col. 8=col. 8 for preceding month+col. 1−col. 6−col. 7.
Limited to 2,500,000 acre-feet and 340,000 acre-feet as maximum and minimum, respectively.

Column 9—Average storage, thousand acre-feet

Col. 9=$\frac{\text{Col. 8 for preceding month+col. 8 for current month.}}{2}$

Column 10—Trinity capability, megawatts

From graph of capability versus storage in Trinity Reservoir.
Storage used is the minimum storage during the month.

Column 11—Trinity dependable capacity, megawatts

The dependable capacity of Trinity powerplant was previously determined on the basis of releasing minimum required flow at time of minimum head.

Column 12—Trinity, nondependable capacity, megawatts

Nondependable capacity is that capacity together with the minimum energy as specified in table 1 modified, over and above the dependable capacity and associated energy, that remains available for 5 consecutive months or more.

Column 13—Trinity surplus capacity, megawatts

Not used.

[Col. 13 = (col. 10 or $\frac{\text{Col. 16}}{\text{No. of } \frac{\text{KWH}}{\text{KW}} \text{ in table 1 modified for the month}}$, whichever is smaller) − col. 11 − col. 12]

[Surplus capacities shown have no value and were not used in the study.]

Column 14—Trinity powerplant factor, kilowatt-hours per acre-foot

From graph of kilowatt-hours per acre-foot versus storage in Trinity Reservoir.
Storage used is the average storage during the month.

Column 15—Release through powerplant, thousand acre-feet

Col. 15 = col. 2 + col. 3 + col. 4.

Column 16—Trinity energy, million kilowatt-hours

Col. 16 = col. 14 × col. 15.

Column 17—Trinity energy for dependable capacity, million kilowatt-hours

Col. 17 = col. 11 × KWH/KW specified in table 1 modified.

Column 18—Trinity energy for nondependable capacity, million kilowatt-hours

Col. 18 = col. 12 × KWH/KW specified in table 1 modified.

Column 19 Trinity surplus energy, million kilowatt-hours

Col. 19 = col. 16 − col. 17 − col. 18.

Column 20—Inflow to Lewiston Reservoir from below Trinity Dam, thousand acre-feet

Basic data from table dated January 27, 1956, transmitted by letter dated February 8, 1956, from United States Bureau of Reclamation, region 2.

Column 21—Total flow at Lewiston Dam, thousand acre-feet

Col. 21 = col. 6 + col. 20.

Column 22—Required downstream fish release, thousand acre-feet

Basic data from table dated January 27, 1956, transmitted by letter dated February 8, 1956, from United States Bureau of Reclamation region 2.

Column 23—Blank

Column 24—Spill at Lewiston Dam, thousand acre-feet

$$\text{Col. 24} = \text{col. 21} - \text{col. 22} - \left(\frac{3200}{12,100} \times \text{hours in month}\right).$$

Column 25—Total downstream flow at Lewiston, thousand acre-feet

Col. 25 = col. 22 + col. 24.

Column 26—Lewiston capability, megawatts

Previously computed as the installed and dependable capacity under the minimum required fish release of 150 cubic feet per second.

Column 27—Lewiston dependable capacity, megawatts

Computed to be constant 0.6 megawatts.

Column 28—Lewiston nondependable capacity, megawatts

Omitted.

Column 29—Lewiston surplus capacity, megawatts

Omitted.

Column 30—Release through powerplant, thousand acre-feet

Considered to be a constant 9,000 acre-feet per month.

Column 31—Lewiston energy, million kilowatt-hours

Col. 31 = 9,000 × powerplant factor (48.4 kilowatt-hours per acre-foot).

Column 32—Lewiston energy for dependable capacity, million kilowatt-hours

Col. 31 = col. 32 (all energy generated was assigned to support of the dependable capacity).

Column 33—Lewiston energy for nondependable capacity, million kilowatt-hours

Omitted.

Column 34—Lewiston surplus energy, million kilowatt-hours

Omitted.

Column 35—Diversion through Clear Creek tunnel, thousand acre-feet

Col. 35 = col. 6 − col. 22 + col. 20 − col. 24 (limited to a minimum of

$$\frac{3200 \times \text{No. of } \frac{\text{KWH}}{\text{KW}} \text{ in table 1 modified for the month}}{12,100}$$

and a maximum of $\frac{3200 \times \text{No. of hours in month}}{12,100}$).

Column 36—Clear Creek capability, megawatts

Equal to the installed capacity of the plant.

Column 37—Clear Creek energy, million kilowatt-hours

Col. 37 = col. 35 × powerplant factor (493 kilowatt-hours per acre-foot).

Column 38—Clear Creek energy for dependable capacity, million kilowatt-hours

Col. 38=col. 36×kilowatt-hours per kilowatt specified in table 1 modified.

Column 39—Clear Creek surplus energy, million kilowatt-hours

Col. 39=col. 37−col. 38.

Column 40—Clear Creek flow at Whiskeytown, thousand acre-feet

Basic data from table dated January 27, 1956, transmitted February 8, 1956, from United States Bureau of Reclamation, region 2.

Column 41—Minimum requirements for Spring Creek tunnel, thousand acre-feet

Initial.—Col. 41=$\dfrac{3600\times\text{No. of }\frac{\text{KWH}}{\text{KW}}\text{ in table 1 modified for the month.}}{12{,}100}$

Ultimate.—Col. 41=$\dfrac{3520\times\text{No. of }\frac{\text{KWH}}{\text{KW}}\text{ in table 1 modified for the month}}{12{,}100}$

Column 42—Total diversion through Spring Creek tunnel, thousand acre-feet

Col. 42=col. 49 for preceding month+col. 35+col. 40−col. 43−col. 44−col. 48−250, but not less than col. 41 or greater than $\dfrac{3600\times\text{No. of hours in month.}}{12{,}100}$

Column 43—Irrigation release, thousand acre-feet

Basic data from meeting of United States Bureau of Reclamation and Pacific Gas & Electric engineers on July 26, 1956.

Column 44—Clear Creek fish release, thousand acre-feet

Basic data from meeting of United States Bureau of Reclamation and Pacific Gas & Electric engineers on July 26, 1956.

Column 45—Spill at Whiskeytown Reservoir, thousand acre-feet

Col. 45=col. 49 for previous month+col. 35+col. 40−col. 43−col. 44−col. 48−$\left(\dfrac{3600\times\text{No. of hours in month}}{12{,}100}\right)$−250.

No negatives.

Column 46—Total outflow from Whiskeytown Reservoir, thousand acre-feet

Col. 46=col. 42+col. 43+col. 44+col. 45.

Column 47—Evaporation rate, feet per month

Evaporation rate for Whiskeytown Reservoir assumed to be the same as Shasta Reservoir, as specified in United States Bureau of Reclamation Study 75F dated December 1955.

Column 48—Evaporation, thousand acre-feet

From graph of evaporation loss versus Whiskeytown Reservoir storage. Storage used is that for the end of the preceding month.

Column 49—Whiskeytown Reservoir end of month storage, thousand acre-feet

Col. 49=col. 49 for preceding month+col. 35+col. 40−col. 46−col. 48.

Column 50—Average storage, thousand acre-feet

Col. 50=$\dfrac{\text{Col. 49 for preceding month+col. 49 for current month}}{2}$.

Column 51—Spring Creek capability, megawatts

Initial.—Equivalent to the installed capacity.

Ultimate.—From graph of capability versus storage in Whiskeytown Reservoir. Storage used is the minimum storage during the month.

Column 52—Spring Creek dependable capacity, megawatts

Initial.—Equivalent to the installed capacity.

Ultimate.—Based on the minimum head resulting from the drawdown of Whiskeytown Reservoir and the minimum flow necessary to support the dependable capacity on table 1 modified capacity factors.

Column 53—Spring Creek nondependable capacity, megawatts

Initial.—Omitted.

Ultimate.—Determined in the same manner as outlined for Trinity powerplant, col. 12.

Column 54—Spring Creek surplus capacity, megawatts

Initial.—Omitted.

Ultimate.—Not used.

[Col. 54=(col. 51 or $\frac{\text{col. 56}}{\text{No. of } \frac{\text{KWH}}{\text{KW}} \text{ in table 1 modified for the month}}$, whichever is smaller)−col. 52−col. 53.]

[Surplus capacities shown have no value and were not used in the study.]

Column 55—Spring Creek powerplant factor, kilowatt-hours per acre-foot

Initial.—A computed constant of 510 kilowatt-hours per acre-foot.

Ultimate.—From graph of powerplant factor versus Whiskeytown storage. Storage used is the average storage during the month.

Column 56—Spring Creek energy, million kilowatt-hours

Col. 56=col. 42×col. 55.

Column 57—Spring Creek energy for dependable capacity, million kilowatt-hours

Col. 57=col. 52×KWH/KW specified in table 1 modified.

Column 58—Spring Creek energy for nondependable capacity, million kilowatt-hours

Col. 58=col. 53×KWH/KW specified in table 1 modified.

Column 59—Spring Creek surplus energy, million kilowatt-hours

Col. 59=col. 56−col. 57−col. 58.

ENCLOSURE 2

TRINITY RIVER PROJECT—ALTERNATIVE STEAM PLANT COSTS

(*a*) *Location.*—The alternative steam plant, used as a basis for cost of equivalent steam power applied as a value of power to the output of Trinity plants, was assumed to be located in the Delta area near the company system load center.

(*b*) *Cost of alternative steam power.*—The cost of alternative steam power was determined on the basis of unit capital costs of facilities to determine unit costs of power, that is, cost of dependable capacity per kilowatt-year plus cost of energy per kilowatt-hour, at load center.

Unit capital cost of the assumed modern company-owned steam plant in the Delta area was estimated to be $125 per kilowatt. Related step-up, transmission and terminal switching facilities were estimated to cost $18 per kilowatt.

Based on these unit capital costs, the annual costs, consisting of fixed charges, fixed operating costs and variable operating costs, were determined.

Fixed charges for return on depreciated investment, depreciation, Federal and State taxes on income, property taxes and insurance, injuries, etc., amounted to $16.25 per kilowatt-year for production plant and $2.16 per kilowatt-year for step-up.

Fixed operating charges for operation, maintenance, general expense, no-load fuel, and reserve fuel storage amounted to $5.58 per kilowatt-year for production plant. Operation, maintenance and general expense for step-up was $0.16 per kilowatt-year.

Variable operating charges for fuel and variable operation and maintenance costs, based on incremental energy production at 684 net kilowatt-hour per barrel with fuel (oil and gas) at $2 per barrel, was computed to be 3.02 mills per kilowatt-hour.

Total annual costs of the steam plant and related step-up and transmission, therefore, are $24.15 per kilowatt-year and 3.02 mills per kilowatt-hour. After adjusting for transmission losses from plant, total annual costs are $24.64 per kilowatt-year of dependable capacity and 3.08 mills per kilowatt-hour of energy at load center. Nondependable capacity, available for short periods of time, has been valued on the basis of savings in operating costs during shutdown of steam generation during the period of availability of such capacity at $4.50 per kilowatt-year at load center.

These costs of alternative steam power were applied as values to the output of the Trinity plants. To apply the values to Trinity falling water, they were translated to the Trinity plants by adjustment for transmission losses. At hydro plant, the values used were $23.53 per dependable kilowatt-year, $4.30 per nondependable kilowatt-year, and 2.917 mills per kilowatt-hour.

Applying these values to Trinity power output derived in operation study T–3, the average gross value of Trinity power would be $11,950,000 during the initial period of project operation and $11,265,000 under ultimate conditions. Deducting annual company costs of producing, transforming, switching, and transmitting Trinity power from these gross values leaves an annual margin of value over cost available for average falling water payments of $4.8 million a year during the initial period and $4.1 million a year under ultimate conditions. The full amounts of these values over costs were offered in payments to the Government for falling water in the form of specified rates per acre-foot used through the Trinity plants.

Cost of oil and gas fuel used in deriving the cost of alternative steam power was $2 per equivalent barrel as noted above. This price represents the composite price for natural gas and fuel oil, inasmuch as modern company steam plants are equipped to utilize both fuels. The $2 composite price is substantially the same price which the company has recently used in economic justifications for other proposed hydroelectric projects, in comparison with alternative steam generation, in proceedings for certificates for public convenience and necessity before the California Public Utilities Commission.

Actual composite fuel costs in recent years have been somewhat less than the $2 price assumed in the company Trinity analysis. Such composite costs, of course, depend upon the ratio of gas fuel to fuel oil used, which, in turn, is dependent, among other factors, on (1) temperatures during the year, which influence the quantity of gas fuel available for steam generation purposes, and (2) the type of water year for hydroelectric power supply, which is directly related to the amount of required steam-power production.

In the first 9 months of the current year, 1957, the fuel supply on company steam plants consisted of 70 percent natural gas and only 30 percent fuel oil. Even if the company had paid the current record price of $2.90 per barrel for all fuel oil used in the first 9 months of this year (which it will not because of stocks of lower priced oil on hand), the composite cost of fuel for steam generation for this period would have been less than 2 percent above the price of $2 per equivalent barrel assumed in the Trinity study. The foregoing 1957 fuel-consumption figures are for all steam plants on the company system, and include several plants where only fuel oil is burned, other plants located at refineries where residual fuel is the principal source of heat, and the Kern steam plant where fuel oil is the principal source of supply.

When consideration is given only to large modern steam plants in the delta area, which are of the same type used as a basis for the Trinity study, the effect of the use of gas on the composite fuel cost is even more pronounced. The percentage of gas fuel used at these plants during the first 9 months of 1957 was higher than for the average of all system plants. Again, assuming that the cost of all oil used at these plants would have been at the unprecedented price of $2.90 per barrel, the composite fuel cost would have been less than the composite cost of $2 per equivalent barrel used in the Trinity study.

In view of the foregoing, the $2 composite fuel price assumed for the Trinity study is believed to be a reasonable estimate.

(*c*) *Projection of fuel costs.*—No projection of fuel costs was made. The composite oil and gas fuel price of $2 used in the Trinity analysis was arrived at after consideration of the many factors involved, and was then established through judgment and past experience.

Fuel prices, particularly the oil component of the composite fuel price, have fluctuated over a wide range in the past 50 years. Oil prices in the San Francisco Bay area ranged from $1 per barrel down to 60 cents prior to the First World War, then sharply climbed to $2 in 1920. From this peak, fuel oil dropped to $1 per barrel in the early 1920's, briefly jumped to $1.65, and then fell to 89 cents per barrel during the period 1928 through 1934. Between 1934 and World War II, the price varied between a high of $1.15 and a low of 80 cents when the United States entered the war. From the end of the Second World War, when the price was $1.15, the price of oil increased by 100 percent to a $2.30 peak in 1948. In less than a year, the price dropped to $1.35, then rose to $1.60–$1.90 range in the first half of the 1950 decade. Beginning in 1955, the recent increase, almost as high percentagewise as the 1946–48 rise, commenced, and oil reached its present unprecedented price of $2.90 per barrel.

With the current increase, the price of oil has equaled or exceeded $2 per barrel for the third time in a half century of record. In the 2 earlier instances, the price has fallen back by substantial amounts to $1 in the 1920's and 80 cents in 1940. It is both possible and probable that, in the future, oil prices will at times be substantially less than the current price.

This record of fluctuations in oil prices, as well as the effect of the cost of natural-gas component and the effect of the price of other competitive fuels, such as coal and, in the future, nuclear fuels, were given due consideration in adopting the composite fuel cost of $2 for the Trinity analysis. Despite the recent sharp increase in the price of oil, the adopted price is still considered to be a reasonable one.

(*d*) *Steam-plant efficiency.*—Assumed steam-plant efficiency used was 720 gross kilowatt-hours per barrel, less 5 percent station use.

(*e*) *Transmission losses.*—Transmission losses from company Trinity plants to load centers for capacity and energy were assumed to be 4.5 and 3.3 percent, respectively, based on findings from studies on the company's network analyzer. Transmission losses from alternative steam plant to load center were assumed to be 2 percent for both capacity and energy.

(*f*) *Hydro plant additional dependability factors.*—No factors relating to hydro plant additional dependability were used in the company's Trinity study.

ENCLOSURE 3

TRINITY RIVER PROJECT—TRINITY TRANSMISSION FACILITIES

Transmission plant which the company plans to build to transmit Trinity power to points of use consists of a single-circuit, 220-kilovolt transmission line from the Trinity powerplant to the Clear Creek powerplant; a short, 13.8-kilovolt tapline from the Lewiston powerplant to existing company lines in the vicinity of the Lewiston plant; 2 single-circuit, 220-kilovolt transmission lines from the Clear Creek powerplant to the Spring Creek powerplant; 1 double-circuit and 1 single-circuit, 220-kilovolt transmission lines from the Spring Creek powerplant to the company's existing Cottonwood switchyard; additions to the Cottonwood switchyard, and transmission, switching, and terminal facility additions to the company's integrated transmission system south of Cottonwood.

The capital cost of these facilities is estimated at $20,212,000, and the total annual cost, including fixed charges, operation, maintenance, and general expense, is estimated at $2,512,000.

ENCLOSURE 4

TRINITY RIVER PROJECT—TRINITY POWERPLANTS AND RELATED SWITCHYARDS

The estimated costs of the company's planned Trinity powerplants and their related switchyards are: Trinity, $9,924,000; Lewiston, $377,000; Clear Creek, $11,602,000; and Spring Creek, $14,822,000. All transmission costs are included in costs set forth in enclosure 3.

ENCLOSURE 5

TRINITY RIVER PROJECT—WHEELING UNDER ARTICLES 7 (d) AND 7 (e), PROPOSED SUPPLEMENT NO. 5, CONTRACT 175r–2650

Articles 7 (d) and 7 (e) read as follows:

"(d) If the proposed plan San Luis unit of the Central Valley project is constructed in whole or in part by the United States or by the State of California, the United States shall compensate the contractor for any use of its facilities to deliver electric power and energy for the account of the United States to the pumping plants of said unit, as follows:

"(1) For delivery at 230,000 volts at the switchyard of the main pumping plant, and at either 115,000 volts or 69,000 volts at other pumping plants or substation locations from available transmission lines of the contractor.

"(i) Entirely outside the contractor's peak load period, as defined in the sales contract, one-third of 1 mill per kilowatt-hour;

"(ii) During such contractor's peak load period in any month, one-third of 1 mill per kilowatt-hour plus 12½ cents per kilowatt of the maximum 30 minute integrated demand during such period in that month.

"(2) For delivery at 12,000 volts from the contractor's distribution lines to pumping plants at the rate provided in article 10 (a) (iii) of the exchange contract.

"(e) Losses in transmission to pumping plants of the San Luis unit shall be deemed to be—

(1) For delivery at 230,000 volts, 3 percent;
(2) For delivery at 115,000 volts or 69,000 volts, 5 percent;
(3) For delivery at 12,000 volts, 9 percent."

1. Derivation of wheeling rates

Power capacity and energy requirements for operation of the San Luis unit were first established from Bureau preliminary estimates, supplemented by company studies of the project.

Based on these requirements, estimates were made to determine the cost of service by the company, including the cost of required additional facilities and use of existing facilities.

The wheeling rates shown in article 7 (d) were then developed to recover cost of service. (Wheeling rates for small deliveries at low voltages as established in contract 175r–2650 were not changed, inasmuch as deliveries directly to relift pumps were of the same type contemplated in the original contract.)

Cost of wheeling for the San Luis unit under these rates was found to be substantially less than the cost of transmission over alternative Federal facilities.

2. Derivation of transmission losses

Three percent losses for 230-kilovolt transmission were calculated for wheeling of power from Tracy to the San Luis switchyard to meet estimated pumping loads at that location.

Five percent losses for 115-kilovolt and 69-kilovolt deliveries and 9 percent losses for 12-kilovolt deliveries are the same as those set forth in contract 175r–2650.

PART III. INFORMATION FURNISHED WITH RESPECT TO POWER AND ENERGY COSTS FOR FEDERAL INSTALLATIONS IN NORTHERN CALIFORNIA

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
OFFICE OF THE CHAIRMAN,
Washington, D. C., March 26, 1957.

Hon. CHARLES E. WILSON,
Secretary of Defense, Department of Defense,
Washington, D. C.

MY DEAR MR. SECRETARY: The House Interior and Insular Affairs Committee has under consideration Secretary of the Interior Seaton's recommendation that the Pacific Gas & Electric Co. be permitted to develop the power facilities of the Trinity River project, California.

In connection with the committee's consideration of this matter, I would appreciate having from the Department of Defense a listing of military installations in northern California (north of the Tehachapies) which purchase an appreciable amount of electric energy, say in excess of 200 kilowatts or 1 million kilowatt-hours annually. The information should include, in addition to the name of the installation, the average amount of energy purchased during the last few years, the source of the energy, the approximate cost to the Federal Government, and the estimated needs during the next few years.

You will understand that because this matter is being actively considered by the committee, this information is needed at the earliest possible date.

Sincerely yours,

CLAIR ENGLE, *Chairman.*

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
OFFICE OF THE CHAIRMAN,
Washington, D. C., March 26, 1957.

Hon. LEWIS L. STRAUSS,
Chairman, Atomic Energy Commission,
Washington, D. C.

DEAR MR. CHAIRMAN: The House Interior and Insular Affairs Committee has under consideration Secretary of the Interior Seaton's recommendation that the Pacific Gas & Electric Co. be permitted to develop the power facilities of the Trinity River project, California.

In connection with the committee's consideration of this matter, I would appreciate having from the Atomic Energy Commission a listing of AEC installations in northern California (north of the Tehachapies) which purchase an appreciable amount of electric energy, say in excess of 200 kilowatts or 1 million kilowatt-hours annually. The information should include, in addition to the name of the installation,

the average amount of energy purchased during the last few years, the source of the energy, the appropriate cost to the Federal Government, and the estimated needs during the next few years.

You will understand that because this matter is being actively considered by the committee, this information is needed at the earliest possible date.

Sincerely yours,

CLAIR ENGLE, *Chairman.*

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
OFFICE OF THE CHAIRMAN,
Washington, D. C., March 26, 1957.

Hon. FRANKLIN G. FLOETE,
Administrator, General Services Administration,
Washington, D. C.

DEAR MR. FLOETE: The House Interior and Insular Affairs Committee has under consideration Secretary of the Interior Seaton's recommendation that the Pacific Gas & Electric Co. be permitted to develop the power facilities of the Trinity River project, California.

In connection with the committee's consideration of this matter, I would appreciate having from the General Services Administration a listing of GSA installations in northern California (north of the Tehachapis) which purchase an appreciable amount of electric energy, say in excess of 200 kilowatts or 1 million kilowatt-hours annually. The information should include, in addition to the name of the installation, the average amount of energy purchased during the last few years, the source of the energy, the approximate cost to the Federal Government, and the estimated needs during the next few years.

You will understand that, because this matter is being actively considered by the committee, this information is needed at the earliest possible date.

Sincerely yours,

CLAIR ENGLE, *Chairman.*

OFFICE OF THE SECRETARY OF DEFENSE,
Washington, D. C., April 2, 1957.

Hon. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives.

DEAR MR. CHAIRMAN: Secretary Wilson has asked me to acknowledge your letter of March 26, in which you request certain information concerning the purchase of electrical power for military installations in northern California, in regard to Secretary of the Interior Seaton's recommendations about the development of the power facilities of the Trinity River project, California.

The Secretary of Defense understands that you desire to have the information at the earlist possible date, and is anxious to oblige you in that respect. Consequently, your letter has been forwarded to the Assistant Secretary of Defense (Properties and Installations) with the

request that he gather the desired facts as expeditiously as feasible and send them directly to you.

Col. Fred H. Bounds, Deputy Director (Investigations), Office of Legislative Liaison, has been assigned liaison responsibilities in this matter, and will be glad to assist you in any way possible. He can be reached on extension 54131.

Sincerely yours,

CARLTON R. ADAMS,
Captain, United States Navy,
Director, Office of Legislative Liaison.

ATOMIC ENERGY COMMISSION,
Washington, D. C., March 29, 1957.

Hon. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives.

DEAR MR. ENGLE: This is to acknowledge your letter of March 26, 1957, regarding the recommendation that the Pacific Gas & Electric Co. be permitted to develop the power facilities of the Trinity River project, California.

Be assured your letter will receive our prompt attention, and a reply will be forwarded.

Sincerely yours,

BRYAN F. LAPLANTE,
Special Assistant to the General Manager (Congressional).

GENERAL SERVICES ADMINISTRATION,
Washington, D. C., April 3, 1957.

Hon. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D. C.

DEAR MR. ENGLE: Your letter of March 26 requested certain consumption and cost information on electric-power use by GSA installations in northern California in excess of 200 kilowatts or 1 million kilowatt-hours annually. This is in connection with Secretary of Interior Seaton's recommendation that the Pacific Gas & Electric Co. be permitted to develop the power facilities of the Trinity River project, California.

Inquiry of your office on April 3, 1957, indicated that you would like information for the past year at the earliest possible date. By teletype, dated April 3, 1957, our San Francisco regional office has been instructed to determine what GSA installations may have such a power use, and to compile this information concerning average demand in excess of 200 kilowatts per month or 1 million kilowatt-hours annually, forwarding this as soon as possible. This will then be followed with the other requested information as soon as completed.

We expect to receive this information about April 10, and will forward it to you immediately upon receipt.

Sincerely yours,

BERNARD L. FLANAGAN,
Special Assistant to the Administrator.

ASSISTANT SECRETARY OF DEFENSE
(PROPERTIES AND INSTALLATIONS),
Washington, D. C., May 27, 1957.

Hon. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D. C.

DEAR MR. CHAIRMAN: Your letter of March 26, 1957, to the Secretary of Defense, requesting information on Department of Defense electric-power purchases in northern California, which was acknowledged by the Director, Office of Legislative Liaison, on April 2, was referred to me for final reply.

Attached are tabulations showing electric-power purchases and costs for fiscal years 1954, 1955, and 1956, and estimates of the amounts which will be required in fiscal years 1960 and 1962.

Navy tabulations consist of 4 sheets, the first of which lists the names of naval installations in that area; the second shows electric-power purchases and forecasts for those installations; and the other 2 sheets are tabulations to show the kilowatt-hour costs in mills.

Army information consists of a mimeographed list headed "Electric Power Purchases at Selected Installations" and duplicate photostats showing the cost per kilowatt-hour in mills.

Air Force figures consist of a tabulation entitled "Air Force Installations in Northern California." Enclosed also is a duplicate tabulation showing the cost of this energy in mills per kilowatt-hour.

I hope that this is the information which you need.

Sincerely yours,

FLOYD S. BRYANT.

Activity	
NFSD—Pt. Molate	Naval Fleet Supply Depot, Point Molate, Calif.
Nav. Rad. Sta.—Skaggs	Naval Radio Station, Skaggs Island, Sonoma, Calif.
Nav. Rad. Sta.—Dixon	Naval Radio Station, Dixon, Calif.
Nav. Sta. T. I., S. Fran	Naval Station, Treasure Island, San Francisco, Calif.
Nav. Shipyd—S. Fran	Naval Shipyard, San Francisco, Calif.
NABPD (D)—S. Bruno	Naval Advanced Base Personnel Depot (D) San Bruno, Calif.
NAF—Monterey	Naval Auxiliary Air Station, Monterey, Calif.
Nav. PGSCol.—Monterey	Naval Post Graduate School, Monterey, Calif.
NavSta., S. Fran. (YBI)	Naval Station, Treasure Island, Yerba Buena Island, San Francisco (YBI) Calif.
Nav. Hosp.—Oak	Naval Hospital, Oakland, Calif.
NSC—Oak	Naval Supply Center, Oakland, Calif.
NAS—Oak	Naval Air Station, Oakland, Calif.
NAS—Alameda	Naval Air Station, Alameda, Calif.
NAS—Alameda (PQ)	Naval Air Station, Alameda, Calif. (PQ) Port Quarters.
Nav. Sup. Annex—Stok	Naval Supply Annex, Stockton, Calif.
NAS—Mft. Fld	Naval Air Station, Moffet Field, Sunnyvale, Calif.
Nav. Shipyd—Mare	Naval Shipyard, Mare Island, Vallejo, Calif.
Nav. Mag.—Pt. Chicago	Naval Magazine, Port Chicago, Calif.
NAS—Lemoore	Naval Air Station, Lemoore, Calif. (near Hanford).
NOTS—China Lake	Naval Ordnance Test Center, China Lake, Calif.
MCAAS—Mojave	Marine Corps Auxiliary Air Station, Mojave, Calif.

U. S. Navy—Electric power purchases and forecasts for those California installations located generally north of the Tehachapi Mountains

Activity	Purchased electricity						Total cost			Forecast				Supplier
	1954		1955		1956		1954	1955	1956	Year 1960		Year 1962		
	Kilowatts	Kilowatt-hours	Kilowatts	Kilowatt-hours	Kilowatts	Kilowatt-hours				Kilowatts	Kilowatt-hours	Kilowatts	Kilowatt-hours	
		Thous.		*Thous.*		*Thous.*					*Thous.*		*Thous.*	
NFSD—Pt. Molate	800	986	864	1,069	672	1,029	$17,038	$18,007	$17,048	850	1,000	850	1,000	Pacific Gas & Electric Co.
Nav. Rad. Sta—Skaggs	460	2,406	480	2,392	460	2,486	25,013	25,261	25,898	500	2,700	500	2,700	Do.
Nav. Rad. Sta—Dixon	336	1,978	312	1,715	312	1,636	20,370	18,519	17,292	350	2,000	350	2,000	Do.
Nav. Sta—T. I., S. Fran	4,467	18,784	4,248	18,561	4,608	18,489	187,523	186,032	186,303	6,000	25,000	6,000	25,000	Do.
Nav. Shipyd—S. Fran	15,300	60,348	15,900	66,208	17,760	70,175	586,184	596,514	661,100	20,000	80,000	25,000	95,000	Do.
NABPD (D)—S. Bruno	400	1,173	384	1,107	320	933	16,621	15,708	13,587	500	1,400	500	1,400	Do.
NAF—Monterey	320	1,297	288	1,159	304	1,225	17,349	16,072	16,101	350	1,400	350	1,400	Do.
Nav. PGSCol—Monterey	688	2,712	1,320	3,870	1,260	4,568	33,175	47,230	52,610	1,500	5,000	1,500	5,000	Do.
Nav. Sta—T. I., S. Fran. (YBI)	444	1,940	492	2,086	408	1,723	23,961	23,796	20,952	400	1,700	400	1,700	Do.
Nav. Hosp—Oak	1,164	5,114	1,088	4,609	1,116	4,570	54,973	50,483	49,481	1,200	5,000	1,200	5,000	Do.
NSC—Oak	6,885	20,309	6,966	20,367	6,561	19,833	220,829	221,812	216,382	7,000	21,500	7,000	21,500	Do.
NAS—Oak	384	1,292	444	1,397	504	1,588	16,504	18,111	18,810	550	1,700	550	1,700	Do.
NAS—Alameda	10,080	32,286	10,800	34,074	10,960	37,851	275,788	295,991	346,357	12,000	41,000	13,000	45,000	Bureau of Electric, Alameda.
NAS—Alameda (PQ)	672	1,556	624	1,628	688	1,946	16,678	17,767	20,426	700	2,000	700	2,000	Do.
Nav. Sup. Annex—Stok	4,339	9,012	3,870	9,547	3,690	10,101	68,851	70,576	71,874	6,000	15,000	6,500	16,000	Bureau of Reclamation.
NAS—Mfl. Fld	2,490	10,421	2,470	9,666	2,560	10,568	56,125	53,209	57,928	4,000	14,000	4,500	14,700	Do.
Nav. Shipyd—Mare	17,400	69,634	17,400	73,159	16,900	79,391	300,960	335,174	355,340	30,000	145,000	32,000	147,000	Do.
Nav. Mag—Pt. Chicago	820	3,723	800	3,456	840	3,674	18,803	17,554	17,580	2,500	8,500	2,800	9,200	Do.
NAS—Lemoore										3,000	18,000	8,000	32,000	Pacific Gas & Electric Co.
NOTS—China Lake	12,040	53,468	11,894	56,112	12,580	59,327	474,002	515,831	571,260	15,500	77,000	20,000	88,000	California Electric Power Co.
MCAAS—Mojave	339	1,352	424	1,995	576	2,628	13,923	18,116	22,968	5,000	21,500	7,500	32,000	Southern California Edison Co.

U. S. Navy—Electric-power purchases from selected installations

Installation and location	Supplier	Fiscal year	Annual cost	Annual usage, millions of kilowatt-hours	Kilowatt-hour cost in mills
Naval Fleet Supply Depot, Point Molate, Calif.	Pacific Gas & Electric Co.	1954	$17,038	0.986	17.28
		1955	18,007	1.069	16.84
		1956	17,048	1.029	16.57
Naval Radio Station (Skaggs Island), Sonoma, Calif.	do	1954	25,013	2.406	10.40
		1955	25,261	2.396	10.54
		1956	25,898	2.486	10.42
Naval Radio Station, Dixon, Calif.	do	1954	20,370	1.978	10.30
		1955	18,519	1.715	10.80
		1956	25,898	2.486	10.42
Naval Station, Treasure Island, San Francisco, Calif.	do	1954	187,523	18.784	9.98
		1955	186,032	18.561	10.02
		1956	186,303	18.489	10.08
Naval Shipyard, San Francisco, Calif.	do	1954	586,184	60.348	9.71
		1955	596,514	66,208	9.01
		1956	661,100	70.175	9.42
Naval Advanced Base Personnel Depot D, San Bruno, Calif.	do	1954	16,621	1.173	14.17
		1955	15,708	1.107	14.19
		1956	13,587	.933	14.56
Naval Auxiliary Air Station, Monterey, Calif.	do	1954	17,349	1.297	13.38
		1955	16,072	1.159	13.87
		1956	16,101	1.225	13.14
Naval Post Graduate School, Monterey, Calif.	do	1954	33,175	2.712	12.23
		1955	47,230	3.870	12.20
		1956	52,610	4.568	11.52
Naval Station, Yerba Buena Island (Treasure Island), San Francisco, Calif.	do	1954	23,961	1.940	12.35
		1955	23,796	2.086	11.41
		1956	20,952	1.723	12.16
Naval Hospital, Oakland, Calif.	do	1954	54,973	5.114	10.75
		1955	50,483	4.609	10.95
		1956	49,481	4.570	10.83
Naval Supply Center, Oakland, Calif.	do	1954	220,829	20.309	10.87
		1955	221,812	20.367	10.89
		1956	216,382	19.833	10.91
Naval Air Station, Oakland, Calif.	do	1954	16,504	1.292	12.77
		1955	18,111	1.397	12.96
		1956	18,810	1.588	11.84
Naval Air Station, Alameda, Calif.	Bureau of electricity, department of public utilities, Alameda, Calif.	1954	275,788	32.286	8.54
		1955	295,991	34.074	8.69
		1956	346,357	37.851	9.15
Naval Air Station (port quarters), Alameda, Calif.	do	1954	16,678	1,556	10.72
		1955	17,767	1.628	10.91
		1956	20,426	1.946	10.50
Naval Supply Annex, Stockton, Calif.	Bureau of reclamation	1954	68,851	9.012	7.64
		1955	70,576	9.547	7.39
		1956	71,874	10.101	7.12
Naval Air Station, Moffet Field, Sunnyvale, Calif.	do	1954	56,125	10,421	5.39
		1955	53,209	9,666	5.50
		1956	57,928	10,568	5.48
Naval Shipyard, Mare Island, Vallejo, Calif.	do	1954	300,960	69.634	4.32
		1955	335,174	73.159	4.58
		1956	355,340	79.391	4.48
Naval magazine, Port Chicago, Calif.	do	1954	18,803	3.723	5.05
		1955	17,554	3.456	5.08
		1956	17,580	3.674	4.78
Naval Air Station, Lemoore, Calif.	Pacific Gas & Electric Co.	1954			
		1955			
		1956			
Naval Ordnance Test Center, China Lake, Calif.	California Electric Power Co.	1954	474,002	53.468	8.86
		1955	515,831	56.112	9.19
		1956	571,260	59.327	9.63
Marine Corps Auxiliary Air Station, Mojave, Calif.	Southern California Edison Co.	1954	13,923	1.352	10.30
		1955	18,116	1.995	9.08
		1956	22,968	2.628	8.74

Air Force installations in northern California

Base	Command	Amount of energy purchased and cost of energy purchased			Estimated kilowatt-hours; estimated kilowatts		Supplier
		Fiscal year 1954	Fiscal year 1955	Fiscal year 1956	Fiscal year 1960	Fiscal year 1962	
Mather Air Force Base, Sacramento, Calif.	Air Training command	[1] 11,773,632 $61,771.29	[1] 14,087,000 $71,841.39	[1] 14,504,256 $74,942.00	[1] 36,000,000 [2] 6,500	[1] 40,800,000 [2] 7,000	Bureau of Reclamation wheeling contract with Pacific Gas & Electric Co.
Hamilton Air Force Base, Hamilton, Calif.	Air Defense Command	[1] 10,678,764 $103,309.71	[1] 10,781,222 $111,067.48	[1] 11,328,344 $115,381.58	[1] 12,600,500 [2] 2,500	[1] 13,750,000 [2] 2,600	Pacific Gas & Electric Co.
McClellan Air Force Base, Sacramento, Calif.	Air Materiel Command	[1] 32,877,600 $284,925.00	[1] 40,329,600 $314,580.00	[1] 46,587,768 $340,060.00	[1] 71,600,000 [2] 14,510	[1] 86,750,000 [2] 16,160	Sacramento Municipal Utilities District.
Travis Air Force Base, Fairfield, Calif.	Strategic Air Command	[1] 20,228,072 $92,318.94	[1] 22,123,643 $94,096.07	[1] 19,835,688 $77,025.14	[1] 28,500,000 [2] 6,500	[1] 28,500,000 [2] 6,500	USDI, Bureau of Reclamation, Sacramento region C, Pacific Gas & Electric Co., wheeling.
Castle Air Force Base, Merced, Calif.	do	[1] 6,379,932 $34,468.80	[1] 8,476,537 $47,467.21	[1] 10,455,979 $57,484.00	[1] 26,200,000 [2] 6,000	[1] 26,200,000 [2] 6,000	Do.
Beale Air Force Base, Marysville, Calif.	do	[1] 8,872,346 $43,777.41	[1] 10,754,848 $54,246.03	[1] 9,301,968 $46,873.11	[1] 16,000,000 [2] 3,500	[1] 16,000,000 [2] 3,500	Do.
Parks Air Force Base, Pleasanton, Calif.	Continental Air Command:						
	Bureau of Reclamation	[1] 15,462,720	[1] 19,450,080	[1] 20,374,560	[1] 23,100,000	[1] 23,100,000	Bureau of Reclamation and Pacific Gas & Electric Co.
	Pacific Gas & Electric Co.	[1] 1,238,420	[1] 1,494,560	[1] 1,536,160	[1] 1,600,000	[1] 1,600,000	
	Total	[1] 16,701,140	[1] 20,944,640	[1] 21,910,720	[1] 24,700,000	[1] 24,700,000	
	Bureau of Reclamation	$72,440.00	$91,106.00	$95,831.00	[2] 4,150	[2] 4,150	
	Pacific Gas & Electric Co.	19,230.00	23,921.00	22,262.00			
	Total	91,670.00	115,027.00	118,093.00			

[1] Kilowatt-hours.

[2] Kilowatts.

U. S. Air Force.—Electric power purchases from selected installations

Installation and location	Supplier	Fiscal year	Annual cost	Annual usage, millions of kilowatt-hours	Kilowatt-hour cost in mills
Mather Air Force Base, Sacramento, Calif., Air Training Command.	Bureau of Reclamation wheeling contract with Pacific Gas & Electric Co.	1954	$61,771.29	11.773632	5.247
		1955	71,841.39	14.087	5.100
		1956	74,942.00	14.504256	5.167
Hamilton Air Force Base, San Rafael, Calif., (Hamilton, Calif.), Air Defense Command.	Pacific Gas & Electric Co.	1954	103,309.71	10.078764	10.25
		1955	111,067.48	10.781222	10.30
		1956	115,381.58	11.328344	10.19
McClellan Air Force Base, Sacramento, Calif., Air Materiel Command.	Sacramento Municipal Utilities District.	1954	284,925.00	32.877600	8.67
		1955	314,580.00	40.329600	7.80
		1956	340,060.00	46.587768	7.30
Travis Air Force Base, Fairfield, Calif., Strategic Air Command.	Bureau of Reclamation, Sacramento, Region C, Pacific Gas & Electric Co., wheeling.	1954	92,318.94	20.228072	4.564
		1955	94,096.07	22.123643	4.253
		1956	77,025.14	19.835688	3.883
Castle Air Force Base, Merced, Calif., Strategic Air Command.	do	1954	34,468.80	6.379932	5.403
		1955	47,467.21	8.476537	5.600
		1956	57,484.00	10.455979	5.500
Beal Air Force Base, Marysville, Calif., Strategic Air Command.	do	1954	43,777.41	8.872346	4.934
		1955	54,246.03	10.754848	5.044
		1956	46,873.11	9.301968	4.685
Parks Air Force Base, Pleasanton, Calif., Continental Air Command.	Bureau of Reclamation	1954	72,440.00	15.462720	4.685
		1955	91,106.00	19.450080	4.684
		1956	95,831.00	20.374560	4.703
	Pacific Gas & Electric Co.	1954	19,230.00	1.238420	15.53
		1955	23,921.00	1.494560	16.01
		1956	22,262.00	1.536160	14.49
	Total for above Parks Air Force Base, power.	1954	91,670.00	16.701140	5.489
		1955	115,027.00	20.944640	5.492
		1956	118,093.00	21.910720	5.38

Department of the Army—Electric power purchases at selected installations [1]

Installation and supplier	Fiscal year	Annual cost	Annual usage (million kilowatt-hours)	Demand (kilowatts)
Fort Ord, Pacific Gas & Electric Co	1955	$198,300	20.3	4,092
	1956	190,800	19.2	3,852
	1957	[2] 224,000	[2] 23.3	4,176
	1960		[3] 26.8	[3] 4,800
	1962		[3] 29.1	[3] 5,220
Presidio of Monterey, Pacific Gas & Electric Co	1955	19,700	1.59	444
	1956	21,000	1.70	485
	1957	[2] 21,700	[2] 1.80	459
	1960		[3] 2.07	[3] 528
	1962		[3] 2.25	[3] 574
Fort Baker, Pacific Gas & Electric Co	1955	33,400	2.92	600
	1956	38,300	3.57	732
	1957	[2] 41,300	[2] 3.49	696
	1960		[3] 4.01	[3] 800
	1962		[3] 4.36	[3] 870
Presidio of San Francisco, Pacific Gas & Electric Co	1955	176,400	14.3	3,359
	1956	196,400	15.8	3,959
	1957	[2] 196,000	[2] 16.6	3,934
	1960		[3] 19.1	[3] 4,500
	1962		[3] 20.7	[3] 4,910
San Francisco defense area, Pacific Gas & Electric Co	1955	4,400	.289	150
	1956	51,300	2.99	935
	1957	[2] 84,400	[2] 6.32	981
	1960		[2] 7.27	[3] 1,130
	1962		[3] 7.90	[3] 1,230
Camp Roberts, Pacific Gas & Electric Co	1955	8,500	.627	165
	1956	22,800	1.73	960
	1957	[2] 26,500	[2] 1.93	1,240
	1960		[2] 2.22	[3] 1,430
	1962		[2] 2.41	[3] 1,550
Camp San Luis Obispo, Pacific Gas & Electric Co	1955	15,000	1.07	260
	1956	18,100	1.59	385
	1957	[2] 20,500	[2] 1.81	425
	1960		[2] 2.08	[3] 490
	1962		[2] 2.26	[3] 531

See footnotes at end of table, p. 71.

Department of the Army—Electric power purchases at selected installations [1]—Con.

Installation and supplier	Fiscal year	Annual cost	Annual usage (million kilowatt-hours)	Demand (kilowatts)
Alameda Administration Center, Bureau of Electricity, Department of Public Utilities, Alameda	1955	$56,500	6.68	1,707
	1956	59,200	6.39	1,638
	1957	[2] 61,400	[2] 6.48	1,737
	1960		[3] 7.45	[3] 2,000
	1962		[3] 8.10	[3] 2,170
Sharpe General Depot, [4] Pacific Gas & Electric Co.	1955	23,800	2.66	1,695
	1956	56,700	5.69	3,098
	1957	[2] 59,700	[2] 5.97	3,067
	1960		[3] 6.86	[3] 3,306
	1962		[3] 7.46	[3] 3,466
Letterman Army Hospital, Pacific Gas & Electric Co.	1955	30,700	2.87	1,000
	1956	32,800	2.98	1,000
	1957	[2] 33,600	[2] 2.96	1,052
	1960		[3] 3.40	[3] 1,210
	1962		[3] 3.70	[3] 1,310
Benicia Arsenal, Pacific Gas & Electric Co.	1955	69,200	8.29	3,780
	1956	72,500	9.10	3,810
	1957	[2] 65,400	[2] 8.37	3,682
	1960		[3] 9.62	[3] 4,230
	1962		[3] 10.5	[3] 4,600
Sierra Ordnance Depot, California Pacific Utilities Co.	1955	50,200	4.65	1,200
	1956	51,500	4.43	1,280
	1957	[2] 51,100	[2] 4.23	1,120
	1960		[3] 4.86	[3] 1,290
	1962		[3] 5.29	[3] 1,400
Sacramento Signal Depot, Sacramento Municipal Utility District	1955	57,600	5.74	2,832
	1956	60,400	6.20	2,760
	1957	[2] 64,300	6.90	2,760
	1960		[3] 7.93	[3] 3,170
	1962		[3] 8.62	[3] 3,450
Two Rock Ranch, Pacific Gas & Electric Co.	1955	19,300	1.82	290
	1956	20,800	1.92	660
	1957	[2] 30,000	[2] 2.08	380
	1960		[3] 2.33	[3] 437
	1962		[3] 2.54	[3] 475
Oakland Army Terminal, [5] Pacific Gas & Electric Co.	1955	76,800	6.81	2,774
	1956	112,300	10.4	1,752
	1957	[2] 114,200	[2] 10.6	1,800
	1960		[3] 12.2	[3] 2,070
	1962		[3] 13.3	[3] 2,250

[1] Installations located in California north of boundary of Santa Barbara, Ventura, Los Angeles, and San Bernardino Counties which have purchased demands of 200 kilowatts or larger, and with annual purchases of 1 million kilowatt-hours or more.
[2] 4th quarter fiscal year 1957 was estimated to arrive at cost and usage.
[3] Estimated.
[4] Sharpe General Depot includes Field Annex, Stockton Annex, and Tracy Annex.
[5] Oakland Army Terminal includes Fort Mason and Rio Vista storage area.

Source: Electric Energy Utilization Reports, R. and U. Cost Reports, and other records in Office, Chief of Engineers.

U. S. Army—Electric power purchases from selected installations

Installation and location	Supplier	Fiscal year	Annual cost	Annual usage (millions of kilowatt-hours)	Kilowatt-hour cost (mills)
Fort Ord, Monterey, Calif.	Pacific Gas & Electric Co.	1955	$198,300	20.3	9.77
		1956	190,800	19.2	9.94
		1957	[1] 224,000	[1] 23.3	9.62
Presidio of Monterey, Monterey, Calif.	do	1955	19,700	1.59	12.39
		1956	21,000	1.70	12.35
		1957	[1] 21,700	[1] 1.8	12.06
Fort Baker, Sausalito, Calif.	do	1955	33,400	2.92	11.44
		1956	38,300	3.57	10.73
		1957	[1] 41,300	[1] 3.49	11.83
Presidio of San Francisco, San Francisco, Calif.	do	1955	176,400	14.3	12.34
		1956	196,400	15.8	12.43
		1957	[1] 196,000	[1] 16.6	11.81
San Francisco Defense Area, Berkeley, Calif.	do	1955	4,400	.289	15.22
		1956	51,300	2.99	17.16
		1957	[1] 84,400	[1] 6.32	13.35
Camp Roberts, San Miguel, Calif.	do	1955	8,500	.627	13.56
		1956	22,800	1.73	13.18
		1957	[1] 26,500	[1] 1.93	13.73
Camp San Luis Obispo, San Luis Obispo, Calif.	do	1955	15,000	1.07	14.02
		1956	18,100	1.59	11.38
		1957	[1] 20,500	[1] 1.81	11.33
Alameda Administration Center, Alameda, Calif.	Bureau of Electricity, Department of Public Utilities, Alameda, Calif.	1955	56,500	6.68	8.46
		1956	59,200	6.39	9.26
		1957	[1] 61,400	[1] 6.48	9.47
Sharpe General Depot, Stockton, Calif.	Pacific Gas & Electric Co.	1955	23,800	2.66	8.95
		1956	56,700	5.69	9.96
		1957	[1] 59,700	[1] 5.97	10.00
Letterman Army Hospital, San Francisco, Calif.	do	1955	30,700	2.87	10.70
		1956	32,800	2.98	11.01
		1957	[1] 33,600	[1] 2.96	11.35
Benicia Arsenal, Benicia, Calif.	do	1955	69,200	8.29	8.35
		1956	72,500	9.10	7.97
		1957	[1] 65,400	[1] 8.37	7.81
Sierra Ordnance Depot, Susanville, Calif.	California Pacific Utilities District.	1955	50,200	4.65	10.80
		1956	51,500	4.43	11.63
		1957	[1] 51,100	[1] 4.23	12.08
Sacramento Signal Depot, Sacramento, Calif.	Sacramento Municipal Utility District.	1955	57,600	5.74	10.03
		1956	60,400	6.20	9.74
		1957	[1] 64,300	[1] 6.90	9.32
Two Rock Ranch, Petaluma, Calif.	Pacific Gas & Electric Co.	1955	19,300	1.82	10.60
		1956	20,800	1.92	10.83
		1957	[1] 30,000	[1] 2.03	14.78
Oakland Army Terminal, Oakland, Calif.	do	1955	76,800	6.81	11.28
		1956	112,300	10.4	10.08
		1957	[1] 114,200	[1] 10.6	10.77

[1] 4th quarter 1957 was estimated to arrive at cost and usage.

ATOMIC ENERGY COMMISSION,
Washington, D. C., April 4, 1957.

Hon. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives.

DEAR MR. ENGLE: I am glad to send you, on the enclosed table, the information requested in your letter of March 26, 1957, to the Chairman, Lewis L. Strauss.

Sincerely yours,

DAVID F. SHAW,
Assistant General Manager.

Power consumption and estimated future requirements of AEC installations in northern California

[Power is supplied to all facilities by Pacific Gas & Electric Co. under contracts between the company and the AEC contractor]

Year [1]	Berkeley [2]			Livermore			Site 300 [5]			Sandia-Livermore site		
	Kilowatts [3]	Kilowatt-hours [4]	Cost	Kilowatts	Kilowatt-hours	Cost	Kilowatts	Kilowatt-hours	Cost	Kilowatts	Kilowatt-hours	Cost
1952	5,600	16,593,000	$145,824	4,000	19,000,000	$206,000						
1953	5,700	15,889,000	171,835	8,500	22,000,000	239,000						
1954	6,500	28,011,000	192,228	7,000	17,300,000	188,000						
1955	9,800	28,354,000	241,378	8,050	20,800,000	220,500						
1956	13,300	32,228,000	320,960	9,521	28,108,000	284,702	36	46,520	$1,429			
1957	16,000	36,000,000	410,000	10,300	32,400,000	335,000	200	720,000	9,600	60	42,000	$558
1958	19,500	40,000,000	525,000	11,500	38,000,000	361,000	280	800,000	10,500	1,200	2,500,000	31,300
1959	22,800	45,000,000	660,000	13,000	45,000,000	428,000	400	900,000	11,800	2,000	5,650,000	64,100

[1] 1952 through 1955 figures are actual recorded amounts; 1956 figures are estimated from January through October 1956, actual amounts; 1957 through 1959 figures are estimated.

[2] Berkeley, Livermore, and site 300 are operated under contract by University of California Radiation Laboratory; Sandia site is operated by Sandia Corp.

[3] Maximum kilowatt demand.

[4] Kilowatt-hours used in year.

[5] Site 300 is a classified facility in the vicinity of Tracy, Calif.

GENERAL SERVICES ADMINISTRATION,
Washington, D. C., April 12, 1957.

Hon. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D. C.

DEAR MR. ENGLE: Attached is a tabulation of GSA installations in northern California, north of the Tehachapies, which purchase electric energy with average demand in excess of 200 kilowatts or 1 million kilowatt-hours annually. This information was requested in your letter of March 26.

The tabulation was prepared by region 9, Public Buildings Service, General Services Administration, and covers the period from July 1, 1952, to February 28, 1957, 4 months short of 5 fiscal years. Our records for the period prior to July 1, 1952, have been sent to the records depository, and because of a different accounting procedure used before that time, it would be very difficult for us to assemble information for the remaining 4 months of a full 5-year period.

Inasmuch as the energy consumption at each of the installations has been fairly consistent, we trust the information provided by this tabulation will be adequate for your purposes.

Sincerely yours,

FRANKLIN G. FLOETE, *Administra or.*

Installations in northern California purchasing electric energy or power in excess of 200 kilowatts and/or 1,000,000 kilowatt-hours per year

Name and location of installation	Source of energy	Period covered	Average demand (kilowatts)	Total energy purchased (kilowatt-hours)	Dollar cost for period	Estimated annual need next 5 years		Remarks
						Kilowatt demand	Kilowatt-hours use	
Federal Office Building, Civic Center, San Francisco, Calif.	Pacific Gas & Electric Co., San Francisco, Calif.	July 1, 1952 through June 30, 1953	525	1,989,055	$24,425.59			
		July 1, 1953 through June 30, 1954	525	2,184,650	26,827.50			
		July 1, 1954 through June 30, 1955	536	2,195,647	26,962.55			
		July 1, 1955 through June 30, 1956	532	2,216,518	27,218.84			
		July 1, 1956 through Feb. 28, 1957	528	1,473,985	18,100.54			8 months only.
						530	2,225,000	
100 McAllister Street Bldg., 100 McAllister St., San Francisco, Calif.	do	July 1, 1952 through June 30, 1953	358	938,346	13,277.60			
		July 1, 1953 through June 30, 1954	346	1,082,426	15,316.33			
		July 1, 1954 through June 30, 1955	340	1,066,334	15,088.63			
		July 1, 1955 through June 30, 1956	364	1,083,166	15,326.80			
		July 1, 1956 through Feb. 28, 1957	400	795,510	11,256.47			Do.
						400	1,110,000	
Post Office and Courthouse Bldg., 7th and Mission Sts., San Francisco, Calif.	do	July 1, 1952 through June 30, 1953	360	1,013,028	14,091.22			
		July 1, 1953 through June 30, 1954	368	1,136,348	15,806.60			
		July 1, 1954 through June 30, 1955	380	1,167,780	16,243.82			
		July 1, 1955 through June 30, 1956	382	1,184,012	16,469.60			
		July 1, 1956 through Feb. 28, 1957	384	801,826	11,153.40			Do.
						390	1,200,000	
U. S. Appraisers Bldg., 630 Sansome St., San Francisco, Calif.	do	July 1, 1952 through June 30, 1953	825	1,793,369	23,600.74			
		July 1, 1953 through June 30, 1954	836	2,258,760	29,725.28			
		July 1, 1954 through June 30, 1955	842	2,012,200	26,480.56			
		July 1, 1955 through June 30, 1956	860	2,072,502	27,274.13			
		July 1, 1956 through Feb. 28, 1957	879	1,386,440	18,245.56			Do.
						890	2,120,000	
49 Fourth Street Bldg., 49 Fourth St., San Francisco, Calif.	do	July 1, 1952 through June 30, 1953	542	1,317,692	19,225.12			
		July 1, 1953 through June 30, 1954	550	2,047,575	26,208.96			
		July 1, 1954 through June 30, 1955	552	2,040,090	26,113.15			
		July 1, 1955 through June 30, 1956	555	1,987,905	25,445.19			
		July 1, 1956 through Feb. 28, 1957	563	1,372,945	17,573.70			Do.
						570	2,100,000	
180 New Montgomery Street Bldg., 180 New Montgomery St., San Francisco, Calif.	do	July 1, 1952 through June 30, 1953	325	1,063,968	14,427.40			
		July 1, 1953 through June 30, 1954	331	1,099,933	14,915.09			
		July 1, 1954 through June 30, 1955	331	1,146,192	15,542.37			
		July 1, 1955 through June 30, 1956	335	1,203,182	16,315.15			
		July 1, 1956 through Feb. 28, 1957	335	759,158	10,294.18			Do.
						340	1,200,000	
2929 Fulton Avenue Bldg., 2929 Fulton Ave., Sacramento, Calif.	Sacramento Municipal Utility District, 2101 K St., Sacramento, Calif.	July 1, 1952 through June 30, 1953	446	1,646,204	17,285.15			
		July 1, 1953 through June 30, 1954	446	1,633,000	17,146.52			
		July 1, 1954 through June 30, 1955	446	1,652,477	17,351.01			
		July 1, 1955 through June 30, 1956	446	1,633,426	17,150.98			
		July 1, 1956 through Feb. 28, 1957	446	1,137,183	11,940.43			Do.
						450	1,700,000	

PART IV. OTHER INFORMATION FURNISHED THE COMMITTEE

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
OFFICE OF THE CHAIRMAN,
Washington, D. C., June 13, 1957.

Mr. PETER E. MITCHELL,
President, Public Utilities Commission,
San Francisco, Calif.

DEAR MR. MITCHELL: Legislation is now pending before this committee to authorize the Secretary of the Interior to sell the falling water available from the Trinity River project of the Bureau of Reclamation to the Pacific Gas & Electric Co. In connection with certain studies made to estimate the additional costs of power to various preference customers and Government agencies under a Federal development of Trinity power as opposed to development by Pacific Gas & Electric Co., the Secretary has indicated that the schedule R rate to Pacific Gas & Electric Co. with a 9-percent discount would be available to the Sacramento Municipal Utility District. This district secures its entire power supply from and is the principal customer for the Bureau of Reclamation power in northern California. Apparently it has been assumed that a sizable block of Trinity power would go to Sacramento Municipal Utility District.

In order to enable the committee to fairly appraise the study submitted by the Secretary, will you please advise me whether the R rate is available to the utility district; if so, whether it can be made subject to a 9-percent discount; whether the rate, including the discount, has been approved by your commission and, if not, whether commission approval would be required before it could be made applicable to the utility district. It is my understanding that Sacramento Municipal Utility District now has a contract with Pacific Gas & Electric Co. for supplemental power entered into on June 16, 1955, and approved by your commission on October 18, 1955, which expires in 1971.

Your assistance in this matter will be much appreciated.

Sincerely yours,

CLAIR ENGLE, *Chairman.*

PUBLIC UTILITIES COMMISSION,
STATE OF CALIFORNIA,
San Francisco, June 26, 1957.

Hon. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D. C.

DEAR MR. ENGLE: In connection with your letter of June 13, 1957, regarding charges for the supply of electric power and energy by Pacific Gas & Electric Co. to Sacramento Municipal Utility District, I am pleased to send you the information requested.

Schedule R, resale service, is not available to Sacramento under present conditions. This is in accordance with the applicability clause of the presently effective tariff sheet, which states that the schedule is applicable where "utilities or municipalities take their entire electric energy supply from the company." There is no provision in the schedule for any discounts other than those specified therein for voltage and power factor. A copy of this schedule is enclosed for your information.

Any revisions in schedule R or in the contract you referred to between the company and the utility district would have to be authorized by this Commission.

I hope your questions have been answered satisfactorily and if you desire further assistance or information, please let me know.

Very truly yours,

PETER E. MITCHELL, *President.*

HOUSE OF REPRESENTATIVES,
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
OFFICE OF THE CHAIRMAN,
Washington, D. C., August 29, 1957.

Mr. JEROME K. KUYKENDALL,
Chairman, Federal Power Commission,
Washington, D. C.

DEAR MR. KUYKENDALL: I understand that the Pacific Gas & Electric Co. annually makes a report to the Commission indicating the dependable capacity available to it from various sources including the facilities of the Central Valley project of the Bureau of Reclamation in California.

There is in existence a contract between the Bureau of Reclamation and the company under which all of the power from Shasta, Keswick, Folsom, and Nimbus powerplants is made available to the company. Will you please inform me the number of kilowatts of dependable capacity which the company states is available to it from the Central Valley project powerplants above named.

Sincerely yours,

CLAIR ENGLE, *Chairman.*

FEDERAL POWER COMMISSION,
Washington, September 9, 1957.

Hon. CLAIR ENGLE,
Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D. C.

DEAR MR. CHAIRMAN: This is in reply to your letter of August 29, 1957, concerning the amount of dependable capacity the Pacific Gas & Electric Co. reports as available from the Central Valley project powerplants of the Bureau of Reclamation.

The Pacific Gas & Electric Co. in its 1956 power system statement report to the Federal Power Commission shows 275,000 kilowatts as the dependable capacity available from the Central Valley project. This is the amount reported as available at the time of the company's system peak for the month of August, as estimated on the basis of the water supply of 1931, which is considered to be an adverse water year. The company further explains this dependable capacity as follows:

> Under the contract between United States Bureau of Reclamation and the company, amended as of January 1, 1956, to include Folsom and Nimbus plants, the project dependable capacity on the basis of availability at Tracy switchyard after supplying project use, is 450,000 kilowatts. This is determined under the contract by the total amount of energy available, under adverse water conditions, during the 6-month period July to December.
>
> At the time of the August peak, the capacity estimated by the United States Bureau of Reclamation (estimate, dated February 19, 1957, on the basis of water operations of the project) to be available at Tracy switchyard is 486,000 kilowatts for an adverse year. The related requirements of the United States Bureau of Reclamation customers receiving direct delivery from the Central Valley project lines are estimated to be 211,000 kilowatts.

Deducting the 211,000 kilowatts from the 486,000 kilowatts gives the 275,000 kilowatts which the Pacific Gas & Electric Co. reports as available for meeting its own loads.

The company in its June 1957 report to the Commission on form 12–E shows the same 275,000 kilowatts of dependable capacity from the Central Valley project for adverse water conditions and shows 319,000 kilowatts of dependable capacity as available from Central Valley in an average water year (1923).

Sincerely yours,

FREDERICK STUECK, *Acting Chairman.*

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